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June 2010
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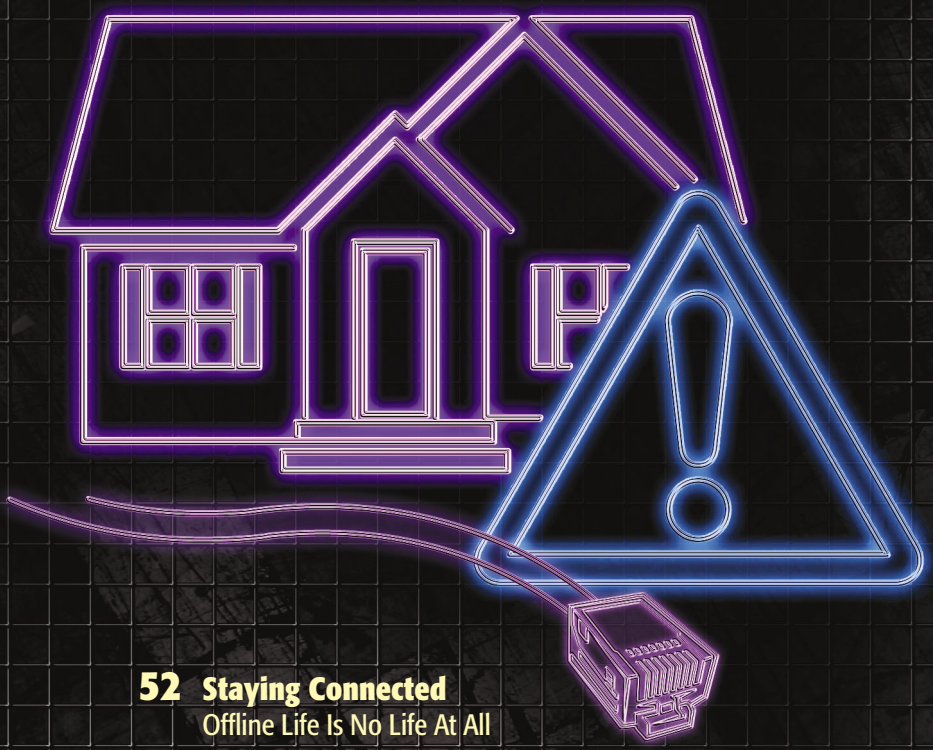
Volume 21 . June 2010 . Issue 6

TROUBLESHOOT YOUR HOME NETWORK



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Windows Central

Computers & Electronics

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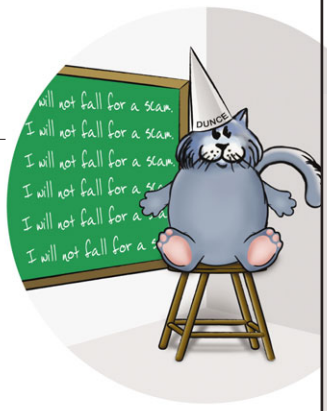

TECH SUPPORT

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Corrections/Clarifications

In "Software Errors" on page 58 of the May issue, we incorrectly said that Roxio Creator 2010 does not support Windows XP. In fact, it supports WinXP when SP3 (Service Pack 3) is installed.

Editor's Note

As we rely more heavily on computers and electronics during our daily activities, the typical home is getting more PC- and entertainment-related gear than ever before. Homes often have multiple computers now (a desktop, a laptop or two, and a netbook, for example). Then, there are the TVs, the DVRs (digital video recorders), the Blu-ray players, the video game consoles, and the sea of new devices that are designed to shuttle video and pictures from your computer to your TV.

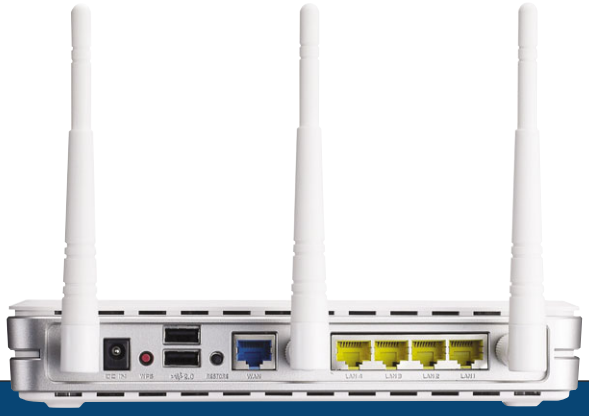
And most of these devices rely on your home network.

Consequently, a downed network is a bigger problem for you today than it probably was a few years ago. Back then, you might have saved your network troubleshooting until the weekend (or later). Today, a downed network is likely a much bigger problem that stops the whole family from working and playing and demands your immediate attention. (Well, a break from the video games for the kids might not be such a disaster, come to think of it.)

To help you get your network up and running as quickly as possible, we put together our best network troubleshooting tips. Of course, we can't cover every network problem, but we have help for subscribers who don't find the answer in these pages: our SmartPeople Computer Support team (see the back cover). It's time to troubleshoot.

Joshua B. Gulick

Joshua Gulick



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DESKTOPS & LAPTOPS

Lenovo Blends Form & Function

If the words "personal computer" make you think of a big, ugly box, it's time to think again. Lenovo's C200 might look like an ordinary LCD monitor, but this slick unit packs an entire PC into its frame.

There might be a few technophiles who prefer the look of a big, boxy computer, but for the rest of us, the integration of form and function is crucial. Lenovo appears to be onboard the style train with two new releases designed to deliver the best of both worlds.

First up is the C200 (starting at $399; www.lenovo.com), an all-in-one computer that looks like little more than an LCD monitor—albeit, a relatively thick one. This computer features an 18.5-inch, 16:9 widescreen LCD with optional touchscreen, a CD/DVD combo burner that's built into the side, five USB 2.0 ports, a 6-in-1 media card reader, and two integrated stereo speakers. The C200 also includes up to a dual-core processor, up to 4GB of memory, 720p HD (high-definition) graphics with optional Nvidia ION graphics, integrated Wi-Fi, and a thermal architecture that's designed to keep the computer cool.

The Lenovo high-sense Web cam included with the C200 features a large lens and increased shading sensitivity that combine to help boost image quality, particularly in low-light situations. Also included is the Lenovo Rescue System, which lets users simply press the F2 key to automatically restore data in the case of system corruption.

Lenovo has also released the IdeaPad S10-3s (starting at $379), an ultra-slim netbook that comes in a variety of colors and patterns. Available in black, white, or a "spring flowers" pattern, the S10-3s is powered by an Intel Atom N470 or N450 processor and includes a 10-inch screen, up to 2GB of DDR2 (double-data-rate 2) memory, three USB 2.0 ports, a 5-in-1 card reader, and a VGA (Video Graphics Array) port that lets you output the display signal to another monitor or a TV.

The S10-3s also has a full-sized chiclet-style keyboard with individually spaced and rounded keys intended to ease typing. Also included are Dolby technology that enhances audio when listening through headphones; DirectShare, which lets you wirelessly sync your files with any other type or brand of computer; and MapLife location-based mapping, which detects your current location and indicates nearby points of interest.

Lenovo's Active Protection System is included in the S10-3s, marking its first appearance outside of the company's premium ThinkPad and IdeaPad laptops. This system protects the netbook against drops and falls.

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How It Works

When your car's "Check Engine" light appears, or even before, plug the CarMD handheld device into your vehicle's Data Link Connector (DLC). The DLC is a small port found right under the dashboard on all 1996 and newer vehicles. It's the same place your mechanic plugs in his expensive diagnostic tools. Not sure where to look? Visit www.CarMD.com to search by year, make and model.

In seconds, CarMD beeps to confirm the test is complete. Then the tool's built-in LEDs let you know how severe the problem is (Green = OK, yellow = possible problem, red = service required). A yellow light can even help you catch a hidden engine problem before you're miles into your next road trip.

To learn more about your car's problem, connect CarMD to your computer using the included software and USB cable. CarMD customers gain free access to an extensive online database (www.carmd.com) that helps diagnose the cause and estimate what repairs should cost down to fair parts and labor in your region. The reports can be used to help do-it-yourselfers with repairs, and give you a bargaining tool with your mechanic.

New Features

The CarMD Vehicle Health System is now for both Mac and PC use. CarMD has also made substantial enhancements to its online portal, including helpful Vehicle Health Matters content and how-to videos for drivers. CarMD customers also now receive Staying Healthy information, including maintenance reminders and FREE access to see all of the safety recalls associated with your registered vehicles. This can help catch a problem that needs attention and can often lead to low- or no-cost repairs.

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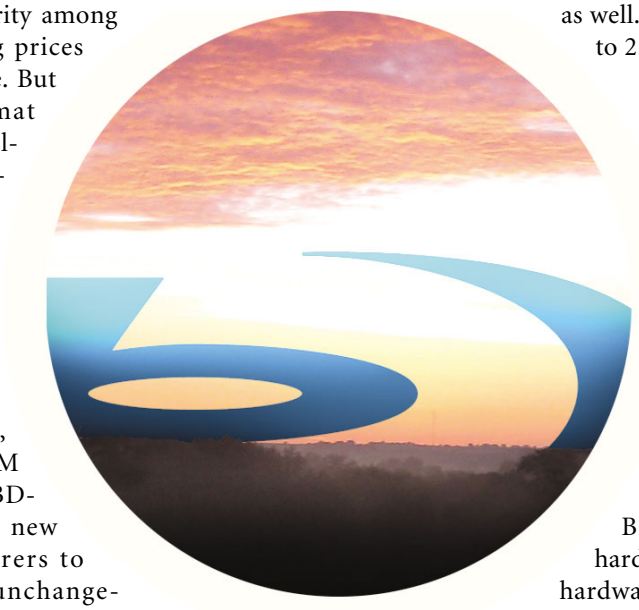
STORAGE

Changes On The Horizon For Blu-ray

The Blu-ray optical format continues to enjoy increasing popularity among consumers thanks to falling prices for both media and hardware. But the minds behind the format aren't standing still, as developers recently announced impressive enhancements to the format that will appear in the coming months.



One of the new specifications announced by the Blu-ray Disc Association (www.blu-raydisc.com) is IH-BD (Intra-Hybrid Blu-ray Disc), which includes one BD-ROM (read-only) layer and one BD-RE (write-once) layer. This new disc will allow manufacturers to place read-only—that is, unchangeable—content on a disc while providing room for users to store their own content, as well. Each of these layers will hold up to 25GB of content.

Also new is the BDXL specification, which will come in 100GB and 128GB write-once discs and 100GB rewriteable discs. This new format uses three to four recordable layers on the discs to achieve the big storage capacities. Initially, the BDXL format will be targeted at commercial customers, but the BDA has said that a consumer version of BDXL is also expected. On the downside, both the IH-BD and BDXL formats will require new hardware to play the media, but the hardware will be backward-compatible with existing 25GB and 50GB Blu-ray Discs.

DISPLAYS

Got Constrast? BenQ Does

If a big contrast ratio is high on your list of needs for an LCD monitor, check out the new V Series from BenQ. Along with a high contrast ratio, these displays offer a host of other features that combine to pack a punch for a reasonable price.

The 24-inch V2420H ($299; www.benq.us) and 21.5-inch V2220 ($249) have a dynamic contrast ratio of 10,000,000:1 that aids in producing blacker blacks and revealing detail in darker areas of the screen. Also onboard is independent color management, which can boost image quality by enhancing certain hues without compromising others.

These LED (light-emitting diode)-backlit displays have no light leakage and include Senseye Human Vision Technology, which works to amplify image richness, clarity, and depth. This technology has six preset modes, including Game, Movie, sRGB, Standard, Photo, and Eco, which cuts energy consumption by up to 65.6% without decreasing overall visual quality. Senseye can also detect the viewing environment and dynamically adjust factors such as contrast, backlighting, and brightness to accommodate that environment.

BenQ's new V Series LCD monitors feature Senseye Technology, which examines your current viewing environment and automatically tweaks the monitor's settings to mesh with the conditions.

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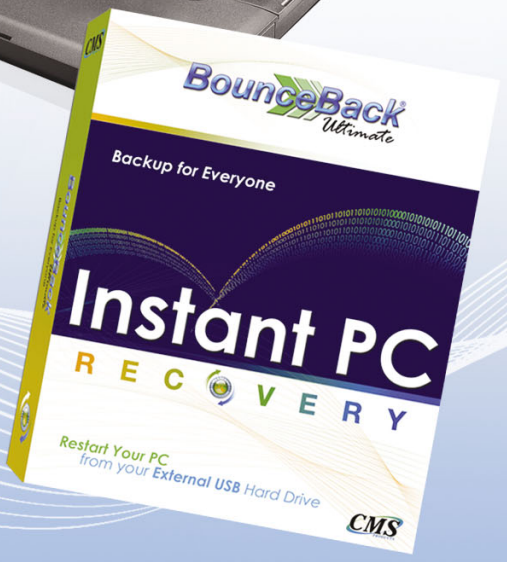

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PRINTERS & PERIPHERALS

Google Goes To The Cloud For Printing

Data knows no bounds in the modern computing world, traveling effortlessly among desktop PCs, smartphones, netbooks, tablets, and other devices. However, printing that data is another matter, because not every device has the drivers required to interface with printers. Google (www.google.com) thinks it has a potential solution for this problem with a new concept that's based in the cloud.

Called Google Cloud Print, this future service circumvents the oft-unreliable system of drivers by printing documents directly from the cloud. Whether you're using your own computer, a smartphone, or even someone else's computer, you can send print jobs to Google Cloud Print via the Web, which will then send it to a specified printer. The service will work with both "cloud-aware" printers and legacy printers.

Cloud-aware printers don't exist yet, but Google predicts that you'll be able to register future printers with cloud print services. Once that happens, you'll be able to send print jobs to that printer from the cloud, with no PC or print drivers necessary. But Google Cloud Print will also work with legacy printers (all current printers), but they'll need to be connected to PCs, or at least networked to a PC.

This Google service is currently in development, but it appears to be much more than just a concept, as the company is already developing the technology behind it.

With Google Cloud Print, you'd be able to print to any printer from any device, with no drivers necessary—and if future printers deliver on promises, a PC won't need to be involved at all.

CPUs, CHIPS & CARDS

AMD Gets Its Own Turbo Mode

As a reader of *Smart Computing*, chances are you're already familiar with Intel's Turbo Boost technology, which automatically boosts or decreases processor frequency depending on workload demands and other factors, such as thermal and electrical limits. Not surprisingly, AMD (www.amd.com) has countered with its own processor-optimizing technology.

Turbo CORE will be available with AMD's new Phenom II X6 (six-core) CPUs as well as new quad-core CPUs that use AMD's Thuban architecture. When used with the X6, the technology keeps an eye on core utilization and automatically increases the speed of three cores by up to 500MHz when it detects that the other cores on the chip aren't currently in use or are underutilized. Meanwhile, Turbo CORE will decrease the power and clock speed of the remaining cores. The benefit here is that the processor can boost performance to applications while staying below certain thermal and electrical limits.

On a related note, Asus (www.asus.com) has also announced a performance-boosting technology, called Turbo Unlocker. Asus claims this motherboard feature will outshine Turbo CORE because it not only works with more AMD processors (including the Phenom II Black Edition), but it also boosts performance even higher.

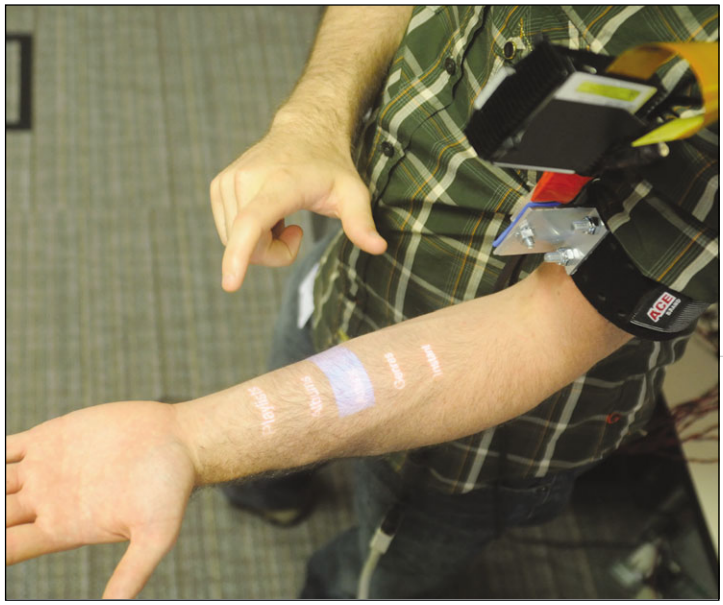
DIGITAL MISCELLANEA

Forget The Mouse–Use Your Hand

If you think your mouse is practically an extension of your hand, wait until your hand *is* your mouse. That prospect might sound outlandish, but it's precisely what's on the mind—or hand—of Chris Harrison, a Carnegie Mellon University graduate student and a former intern at Microsoft Research.

Harrison's Skinput concept works through the use of an armband that contains a bio-acoustic sensing array that detects vibrations transmitted by your body. These sensors contain specially weighted devices that pick up acoustic energy created when a finger taps skin. Harrison notes in his research that the energy can be visible as transverse waves that are created by the displacement of skin when a finger touches it. Those waves can then be used by the Skinput device to carry out commands.

For example, you can touch different parts of your hand or forearm to access your music playlist or answer a call. Skinput technology could also be used with just your fingers—by tapping your thumb and a finger together, you could access your music playlist. This technology is undoubtedly novel, but you won't see it anytime soon—Microsoft sources say it won't be commercially available for at least two years.



Chris Harrison's innovative Skinput technology uses special acoustic sensors that detect presses on the skin, in turn letting you use your hand or forearm as an input device.

PROBLEM-SOLVER: TROUBLESHOOTING THE NEWS

A "Delayed Write Failed" error appeared in Windows. Does this mean my hard drive is failing?

Not necessarily—a common problem that causes this error is a loose or faulty drive cable. First, check that the SATA (Serial Advanced Technology Attachment) or IDE (Integrated Drive Electronics) cable running between the drive and motherboard is firmly connected on both ends. If it is and you're still having problems, replace the existing SATA or IDE cable with a new cable.

My monitor's screen has a green tint. How can I get rid of it?

This problem doesn't often occur when using a fully digital connection between the monitor and your PC. However, if you're using a VGA connection or a DVI-to-VGA adapter, tinting problems can occur if the cable is loose or faulty. Check that the cable is firmly connected to both the monitor and the video port on your PC.

I upgraded to Windows 7, but now I have no sound. What's wrong?

If you have no sound coming out of your computer speakers and don't have any headphones plugged into your PC, click Start, open the Control Panel, click Hardware And Sound, and select Sound. On the Playback tab, make sure the Speakers entry has a green check mark beside it. If it doesn't, right-click the entry and click Set As Default Device. Click Apply and OK.

My PC is emitting one long beep when it boots. Afterward, it displays a black screen.

There are many Web sites (such as www.bioscentral.com) to look up beep codes emitted by various BIOS (Basic Input/Output System) manufacturers. These beep codes can help you pinpoint a problem with your PC, such as memory, CPU, or video issues. However, be sure to listen to the beep carefully—even multiple times, if necessary. Two short beeps can actually sound like one long beep if you're not listening closely.

MOBILE TECHNOLOGY

Connect With Your Kin

Microsoft's Kin phones seek to revolutionize social networking on the mobile platform by shifting the focus from apps to your contacts and the content you'd like to share with them.

Once just a nifty sidebar in the world of computing, social networking is now omnipresent, with Facebook, Twitter, and other tools consuming hefty chunks of consumers' everyday lives. This explosion is due in part to the medium's presence on mobile devices, and now Microsoft is taking the social mobile experience one step further.

The Microsoft Kin (www.kin.com) is a set of Windows phones (Kin One and Kin Two) designed primarily with social networking in mind. The Kin One is a small device with a slide-out QWERTY keyboard built for one-handed texting, while the Kin Two is wider and has a keyboard intended for two-handed texting.

Although the names of these phones (and Kin One's design) might sound toy-like, these phones are far from toys. The Kin One has a 5MP (megapixel) camera with flash that also shoots standard-definition video, and the Kin Two has an 8MP camera that is capable of high-definition video recording. The Kin One and Kin Two have 4GB and 8GB of storage, respectively, and both phones have bright touchscreens that let users pan, scan, and zoom. The Kin One has a mono speaker, and the Kin Two has stereo speakers; both devices have a Zune-powered media player.

Social networking features are integrated seamlessly into the Kin phones through the Kin Loop, which serves as the home screen on the devices. This screen automatically pulls feeds from Facebook, Twitter, MySpace, or other services and updates them directly on the Loop. Contact management is also infused into the Kin—users can select favorite contacts that the phones will prioritize though status updates, messages, feeds, and photos.

These update elements are part of the Kin's overall unique approach to mobile social networking—instead of placing a focus on apps, Microsoft has directed the focus toward people and the videos, text messages, Web pages, status updates, and other information that they'd like to share. Sharing any of those elements is as easy as dragging them to the Spot, another location on the phone that's designed to optimize the entire sharing process. The Kin phones also take advantage of the burgeoning cloud. Instead of relying on backups stored on your own PC, Kin phones use Kin Studio, which automatically backs up your contacts, photos, videos, texts, and call history online, where you can access it on any computer using a Web browser.

The Kin One ($49.99) and Kin Two ($99.99) are available through Verizon Wireless. This price is after rebate and two-year contract agreement.

DULY QUOTED

"It's kind of shocking. It's a little comical for how much he's suing me."

—Justin Kurtz comments on a four-page, $750,000 lawsuit levied against him for starting a Facebook page called "Kalamazoo Residents Against T&J Towing." Western Michigan University students complained on the page that the company towed their cars while they were parked in the students' own apartment complexes or in visitor lots.
Source: woodtv.com

News From The Help Desk

Our Most Common Tech Calls

COMPILED BY KRIS GLASER BRAMBILA

Each month, we receive numerous technical support calls and email messages. Some computer problems are fairly common, and we find that many callers struggle to resolve the same issues. In this article, we cover some of the most common or timely tech support questions and provide our solution for each of them.

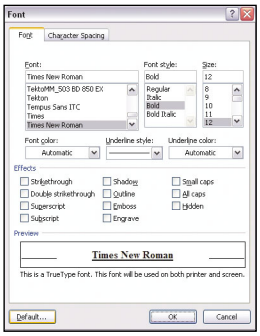
Q I use Gmail, and I also have an email account from my ISP (Internet service provider). I use Microsoft Outlook 2007 to manage that email account. Is there a way to have the messages that go to my Gmail account also appear in Outlook, so I can check both accounts at once?

A Adding your Gmail account to Outlook 2007 is a simple process that saves time because you can view all of your mail from one place, rather than having to log in to multiple accounts to see all of your messages. We'll show you how to download emails to Outlook via POP (Post Office Protocol), which leaves the original messages on Gmail's servers, so you can still check your Gmail messages from any Internet-connected computer.

In order to add your Gmail account to Outlook, you'll have to configure settings in Gmail and Outlook. First, open an Internet browser and log in to your Gmail account. Click Settings in the upper right, and then choose the Forwarding And POP/IMAP tab. In the POP Download section, click the radio button next to Enable POP For All Mail That Arrives From Now On. For option No. 2, When Messages Are Accessed With POP, we recommend choosing Keep Gmail's Copy In The Inbox, so your Gmail messages will still be available online. Click Save Changes at the bottom of the screen. (*NOTE: This page also lets users enable an IMAP [Internet Message Access Protocol] connection with Outlook. IMAP synchronizes Gmail and Outlook, so changes you make in one client [such as making a folder or deleting email] also affect the other. If you would prefer to use IMAP, click the Learn More link under IMAP Access as well as the nearby Configuration Instructions link.*)

Next, open Outlook. Click Tools, Options, and then click the Mail Setup tab. Click Email Accounts. On the Email tab, click the New button. Click the radio button next to Microsoft Exchange, POP3, IMAP, or HTTP, then click Next. Type in your name as you would like it to appear on the emails that you send, your Gmail email address, and your Gmail password. Do not check the box next to Manually Configure Server Settings Or Additional Server Types. Click Next. Outlook will automatically configure email server settings. Click Finish.

You can now open your Outlook inbox and click Send/Receive to receive new emails.



Microsoft Word lets you choose the default font, size, and color for text.

Q Lately, text in my Microsoft Word documents is gray, though it used to be black. When I try to print, this new color doesn't show up very well on the page. How can I restore my black font and start printing again?

A You can easily change the default settings for Word so that each new document you create automatically uses a font size (and color) that you select. In Word 2007, create a new document. On the Ribbon, click the Home tab. Next, locate the Font section and click the small arrow on the lower right to open the Font menu. On the Font tab, choose a font, font style, size, and font color as well as any other effects. To help you choose your font, a preview appears at the bottom of the menu each time you make a change. When you've selected your preferred font, click Default at the bottom, and then click Yes when asked if you want to set the currently selected font as the Default.

In Word 2003, follow the same directions, but access the Font menu by going to the Format menu and choosing Font.

Now, whenever you create a new Word document, it will automatically use the text style you selected in the Font menu.

Q A window that suddenly appeared tells me that my computer has a virus. The window offers antivirus software for a fee, but that doesn't seem typical of Microsoft. What's worse, whatever has infected my computer won't allow me to open any programs, including Add/Remove programs in the Control Panel. How do I get rid of this problem?

A These symptoms can occur if a computer has been infected with rogue security software, a type of malware that tricks users into paying for security software

To boot Windows into Safe Mode, press the F8 key repeatedly while your computer boots, then choose Safe Mode With Networking when prompted.

that does little or nothing to remove actual malware from your computer.

In most cases, a warning that appears much like a standard Windows window alerts you that your computer has been infected with a virus. You are then directed to a Web page that recommends you purchase an antivirus program. If you continue with the purchase, you either relinquish your credit card information to malicious users, give a more serious virus access to your computer, or both. Oftentimes, a computer infected with rogue security software is unable to open Windows menus or executable files, giving you no easy way to get rid of the problem.

One troubleshooting method that is often successful involves downloading and running an anti-malware program called Malwarebytes' Anti-Malware in your computer's Safe Mode.

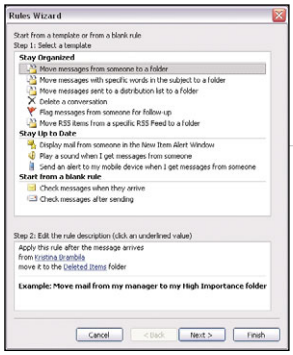
To boot Windows into Safe Mode, press the F8 key repeatedly while your computer boots, then choose Safe Mode With Networking when prompted. Load your browser as you normally would, then point your browser to www.malwarebytes.org. Click Download Free Version on the main page, then Download Now on the download page. Save the file to your hard drive, then double-click it to start the installation. After you install the program, start it and click Perform Full Scan under the Scanner tab. Click Scan. Malwarebytes' Anti-Malware should find and remove the rogue security software from your computer.

If the rogue still exists after your scan, visit our online Tech Support Center and search the How To Get Rid Of section, which has instructions for removing specific viruses.

Q All of my incoming email in Microsoft Outlook 2007 goes to my Inbox folder. Is it possible to configure Outlook to put messages from a specific person, such as my aunt or my boss, into a particular folder?

A Microsoft Outlook 2007 (and earlier versions) lets you create custom rules for diverting messages as they arrive. One of the most common rules instructs Outlook to move email messages from a specific person into a folder of your choosing, rather than putting messages from that person in your inbox.

To create a custom rule, go to Tools and click Rules And Alerts. Under the E-mail Rules tab, click New Rule. From the Stay Organized section in the Step 1: Select A Template box, select Move Messages From Someone To A Folder. In the Step 2: Edit The Rule Description box, click the blue



You can tell Microsoft Outlook where to put incoming messages from specific people using the Rules Wizard.

People Or Distribution List link. From your address book, choose the individual(s) whose emails you'd like to redirect to a different folder and click OK. Next, click the blue Specified link in the Step 2 box. Choose an existing folder by clicking it or create a new folder by clicking the New button on the right and entering the new folder's name. Click OK. Finally, click Finish.

Effective immediately, all incoming emails from the people on your rules list will be automatically redirected to the folder you specified.

Feature Package Topics

Each *Smart Computing* issue includes tips, reviews, and information about a variety of topics. However, each issue also has a featured group of articles about a selected topic. Below is a list of the Feature Packages from the previous year. As a *Smart Computing* subscriber, you have access to all of our archived articles at www.smartcomputing.com.

July 2009:	8 PC Emergencies
August 2009:	Stay Safe Online
September 2009:	Master Your Browser
October 2009:	Driver Updates
Fall Issue:	Upgrade Your PC
November 2009:	Meet Windows 7
December 2009:	Holiday Gift Guide
January 2010:	The Single PC Home
February 2010:	Upgrade Your Notebook
March 2010:	Troubleshoot Windows 7
April 2010:	Clean Your PC
May 2010:	Solve PC Errors

Ventilate Before You Vegetate

Don't Suffocate Your HTPC

MARTY SEMS

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Why did I build an HTPC (home-theater PC)? Put simply, a computer can still do a lot of things other electronics devices can't, such as run Hulu Desktop (www.hulu.com/labs). I needed a new music server, too. Moreover, a PC plugged directly into my HDTV (high-definition television) simply *had* to play media files more reliably than a streaming network connection to my game console.

As luck would have it, a friend sold me a nice, used D-Vine HTPC case with a remote control. It lies horizontal, like an audio receiver, but it's tall enough to hold regular expansion cards (flatter cases require low-profile cards).

The trouble was that there was too much fan noise, which meant that the fans were running faster in an attempt to get rid of heat inside the case. My CPU, graphics card, and motherboard are pretty modest by today's standards, but the case fans still couldn't keep up, especially behind the door of an entertainment center compartment.

To reduce heat production and energy consumption, many HTPC builders switch to small motherboards and low-power processors such as Intel's Atom. I, for one, wanted to reuse hardware I already had. (Have I mentioned that I'm cheap?)

My D-Vine case came with only one small exhaust fan in the rear, plus the fan in the power supply. To let in fresh air from the front, there was a slotted grille cut into the bottom of the case. This arrangement might have been sufficient to cool an Atom system, but not mine.

Thus, I had to increase the amount of airflow through the case. At the same time, I needed to keep its hot exhaust from recirculating back into the intake.

I didn't want to cut holes in my entertainment center if I could help it. Nor did I want to mar the comely aluminum PC case in a visible way, such as by adding fans to the top or sides. Here's what I did instead.

First, I took everything out of the PC case, including the power supply, front display, and switches. In my garage, I cut big holes in the floor of the case near the front panel, being careful not to disturb its feet or motherboard mounts. These large openings would keep the cool air intake from being constricted.

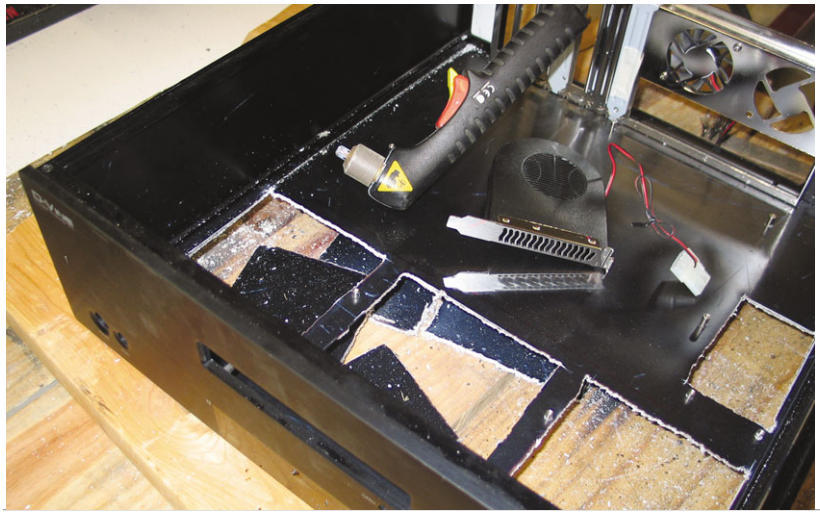
After reassembling the computer, I added a second rear exhaust fan by the CPU. I also installed a slot fan next to the graphics adapter. A slot fan, which has a shroud and a perforated expansion card bracket, sits parallel to the video card and vents hot air out of the case. The net effect was more air being pulled into the front of the case and forced out the back.

As for the entertainment center—and this was serendipity—I actually improved its looks as I improved its ventilation. First, I removed the glass window from the HTPC compartment's door. It was held in by four strips of rubber trim that were wedged into the wood.

Next, I cut a piece of black speaker fabric to fit the door's empty frame. A square yard of the cloth cost me about 10 bucks at a fabric store. I worked the rubber trim back into its channel along the four edges of the door, this time tucking the fabric in with it, and soon my entertainment center had a tasteful ventilation panel instead of an insular glass one.

My HTPC runs much quieter now. As a bonus, the black cloth hides the cables, subwoofer, and dust bunnies that were behind the glass. It also hides the cardstock I cut to separate the cool intake side of the PC compartment from the hot exhaust side.

Just as importantly, the speaker fabric doesn't block the IR (infrared) signals from my remote, so I can still sit on the couch and control my HTPC with it. Time to go update my Hulu queue. . . .



My HTPC case only had rear exhaust fan cutouts, so I made a few intake holes in the floor to guarantee good airflow.

1, 2, 3, Charge!
Unique Variations Of Chargers

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Idapt i3 Universal Desktop Charger

Novothink Solar Surge

Power A PowerSurface Charger

Scosche reviveLite II

Technocel PowerPak

Most people don't give chargers a second thought. Considering their single-purpose nature, why would they? Well, as it turns out, not all chargers are run-of-the-mill, including the models I've been using for mobile devices that offer touches of convenience, organization, environmental consciousness, and cost savings.

Idapt i3 Universal Desktop Charger. Sporting three ports (each accepts interchangeable tips compatible with dozens of devices), the i3's ($49.99; www.idaptweb.com) base station can charge three devices simultaneously. I juiced a BlackBerry Storm, iPod touch, and Creative Zen Stone simultaneously, for example, via one power cord to the base station. Normally, I'd use three separate chargers/cords to do the same. Idapt sells four-, six-, and 10-tip packages. Using the tips is a cinch, though, depending on the gear you are charging, some creative rearranging may be in order to fit everything on the station. Overall, the i3's bulkiness makes this primarily a stationary charging option. By now, the i4 ($59.99) should be selling with three charging slots and one USB port.

Novothink Solar Surge. Love the outdoors? Own an iPhone 3G/3GS or second-gen iPod touch? The Solar Surge ($79.95 [iPhone 3G/3GS]; $69.95 [iPod touch]; www.novothink.com) is right up your hiking trail. Lightweight and handsome, the Surge combines solar panels, a 30-pin dock, and a rechargeable Li-ion polymer battery to suck up sunlight to charge the Surge's internal battery, which itself charges a docked iPhone/iPod touch. About two hours of direct solar exposure fuels 30 minutes of talk time on 3G networks or an hour on 2G networks, Novothink states. Overall, the Surge "more than doubles" the iPhone 3G/3GS' battery life and "offers 105% capacity" of the iPhone.

Additionally, if the sun refuses to shine, you can use your computer to charge the Surge's battery via its built-in USB port, plus charge and sync an iPhone/iPod touch while in the case. Four LEDs indicate if sufficient sunlight is available for charging and how much battery power remains. Further, once the iPhone/iPod touch's battery is fully charged, the Surge automatically begins charging its battery.

Power A PowerSurface Charger. For Wii console owners, keeping Wii Remotes in the game can mean a healthy battery bill. Enter the PowerSurface Charger ($49.99; www.powera.com), which uses an inductive, wireless approach to recharge the two battery packs it bundles for use in the remotes. Slip a battery pack in a remote, place the remote on the PowerSurface's base station, and you're charging. Better, if your remote is wrapped in a Wii MotionPlus jacket, there's no need to remove it to charge. Flashing blue LEDs on the charger's sides indicate remotes are charging; a solid blue LED means charging is complete. It's difficult imagining a more mindless charging solution, which is a good thing.

Scosche reviveLite II. The reviveLite II ($24.99; www.scosche.com) looks like an ordinary wall charger but actually holds several surprises for iPod/iPhone owners seeking an exceptionally mobile-friendly unit. First, a front-folding arm unveils a 30-pin iPod/iPhone charging dock, providing just the right width to solidly hold my iPod touch upright while docked and charging. Further, a USB port built into the charger's right side let me charge non-Apple devices, as well. Finally, a left-side button activates the charger's integrated nightlight. Install an alarm clock app and the reviveLite II is not only a handy mobile charger, it's a ready-made bedside alarm clock that can keep the bogeyman at bay.

Technocel PowerPak. The PowerPak ($49.99; www.technocel.com) is a classic case of "there's more here than meets the eye." Seemingly, the charger is a standard wall-based unit. In actuality, it packs an internal Li-ion battery that can supply a smartphone roughly three hours of talk time. Combined with 10 included interchangeable tips, the PowerPak is compatible with "95% of all handheld USB devices." Further, onboard LED lights indicate how much juice the internal battery has left. Although the PowerPak's cable-based method of screwing tips on is a bit cumbersome, powering scores of devices sans power outlet has already proved exceedingly convenient in my usage.

Withings WiFi Body Scale

Not Your Ordinary Bathroom Scale

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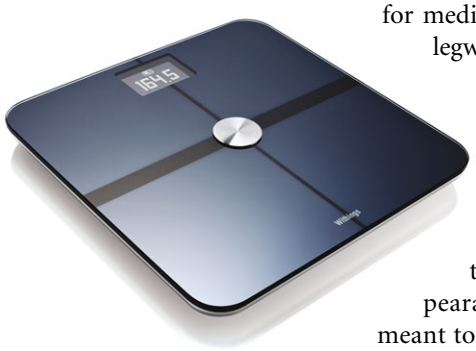
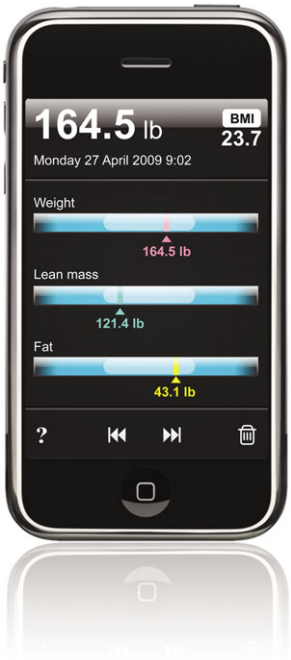


WiFi Body Scale
$159
Withings
contact-mkt@withings.com
www.withings.com



For many of us, the bathroom scale is not our best friend. However, the Withings WiFi Body Scale is not your ordinary bathroom scale. If you're watching your weight for a special diet or monitoring your health for medical reasons, this device takes the legwork out of keeping track of your daily weigh-ins.

For starters, the Withings WiFi Body Scale is a great-looking device. It has a futuristic design with dark tempered glass and a metallic finish to give it a sleek appearance. To be sure, this scale isn't meant to be hidden in a linen closet—it's intended to be on display.

The Withings scale works as you'd expect any scale to: Hop on, wait a couple of seconds, and your weight is displayed on an easy-to-read backlit screen. As it's measuring your weight, the Withings scale is doing much more behind the scenes—it's also measuring your BMI (body mass index), your fat mass, and your lean mass. To calculate this, it sends a low-intensity electrical current through your body, provided you step on it with your bare feet. (*NOTE: The company warns that people who have electronic implants such as pacemakers should not use this scale.*) Pretty impressive, for a scale. But that's still not all. Once the scale gathers this information, it sends the info wirelessly to your computer or iPhone. (You can download the free application from the App Store.)

It took me less than 10 minutes to set up the scale. You will need to insert four AAA batteries (included) and then connect the scale to your PC or Mac with the provided USB cable. (You only need to use the cable for initial setup; afterward, everything is transmitted wirelessly.) Navigate to start.withings.com where you will register and create an account for the free Web service. A wizard walks you through the process of linking your scale with your wireless network.

To get the most accurate readings, Withings recommends weighing yourself at the same time each day under the same circumstances. For instance, weigh yourself each morning before you eat or drink anything.

Once you log in to your account online, you will see all your stats neatly charted for each day. The Web dashboard has a slick user interface, and the entire family can use it to keep track of their health over time. The scale features automatic user recognition, and it can manage stats for up to eight users via the Web service. Simply click the Add A User button, enter the basic information for each person, and let the scale do the rest.

Another feature of the Web service lets you share—if you dare. Scary as that may sound, the idea makes some sense. Maybe you are part of a health club or group with which you would like to share updates of your progress. Or, perhaps you want to send your stats to a fitness-related Web site for analysis. The Withings scale lets you do this by connecting with several popular online services, including Google Health, Microsoft HealthVault, Gym Technik, DailyBurn, and more. You can also make your charts available to other Withings scale users or tweet your weight to your Twitter followers.

I admit that seeing my weight, BMI, and body fat charted and watching the numbers rise and fall was a certain kind of motivation for me. Each day, I found myself turning it into my own little game, working hard and eating more sensibly to make my charts look more impressive. (If even just for myself; I haven't mustered up the courage yet to click the Share button.)

Could I gather useful information from another scale that simply measures weight and BMI? Sure. Could I get the same motivation from any old bathroom scale as long as I kept track of my stats? Yes, probably. But is it more fun to have a device that sends my information wirelessly to my computer to record and chart my progress automatically? Definitely. The Withings WiFi Body Scale makes stepping on the scale each day fun . . . well, sort of, depending on whether you like the numbers.

Connect To A World Of Music

Logitech Squeezebox Radio

TARA SIMMONS BANTAM

SEND YOUR COMMENTS TO
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Squeezbox Radio
$199.99
Logitech
(510) 795-8500
www.logitech.com

Between CDs ripped to hard drives and purchases made online, most people have a digital music collection these days. I personally have acquired quite an iTunes library, and I use my iPod to listen to it often. If I want to share my tunes, I can port my music from room to room with my laptop and play it over my modest laptop speakers, but it's not an ideal setup. The Logitech Squeezebox Radio, a compact device (5.12 x 8.66 x 5.04 inches [HxWxD]) that produces big sound, makes this whole process a little simpler by connecting directly to your wireless network and streaming your music collection. But this isn't just a portal for your music library or an iPod dock; the Squeezebox Radio also connects you to a world of online music—a lot of which happens to be free.

The steps to add the Squeezebox Radio to your home network are the same as those you'd follow to link a PC. Plug in the device, search for and then choose your network from the Squeezebox Radio, enter the network password, and you're set. The 2.4-inch color screen is clear and surprisingly easy to read. Scrolling through the menus is a cinch thanks to the large knob on the front of the device that's reminiscent of a dial you'd find on a radio. The menus are well-organized, and while the many layers of them left me feeling disoriented at times, with experience, I was able to find my way easily.

Once the Squeezebox is connected to the wireless network, accessing the wide array of online music is as simple as choosing Internet Radio from the main menu on the device. The thousands of available stations are organized into categories, such as Local, Music, Talk, and Sports, and then arranged into subcategories. The system is logical, and that made it easy for me to sift through the scores of stations and find exactly what I wanted. Press and hold one of the six preset buttons (just as you would on a car radio) to create a shortcut to a station once you find just the right one.

Similar to the minor hunting, configuring, and saving required to connect to an Internet radio station, tapping into the collection of music already on my PC required some setup. Thankfully, it's not overly complicated. After I downloaded the Squeezebox Server software from www.mysqueezebox.com on my computer, it scanned my hard drive to create an index of my music (only DRM [digital rights management]-free music is compatible) to stream to the Squeezebox Radio. I chose My Music on the Squeezebox Radio to connect to the server, and I was set.

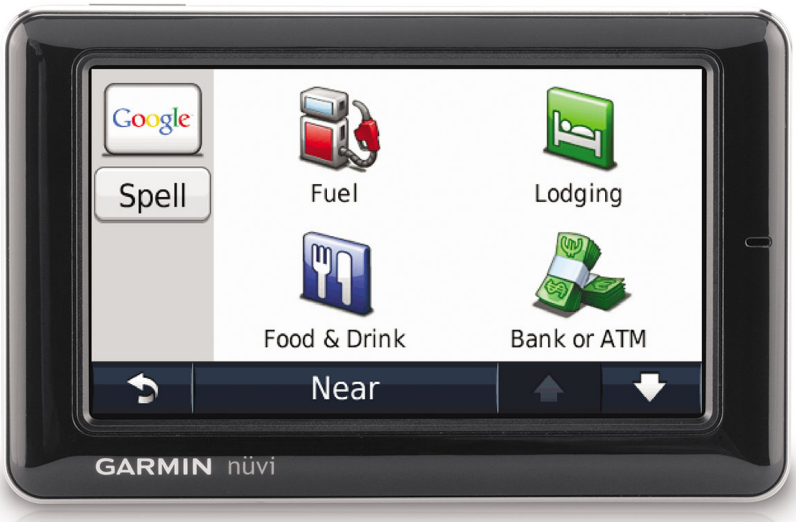
And if that's not enough variety for you, the Squeezebox Radio offers applications that let you expand your musical horizons even more. Create an account at www.mysqueezebox.com to browse and download any of the many available apps. The apps connect you with a variety of social networking and music-related sites; some are paid services, but many are free. For instance, I downloaded the Pandora app and, after logging in to my (already-established) Pandora account, I could create new stations and listen to stations I'd previously created. (Pandora lets users create a station based on music they like and then offers up similar music it thinks they might also like, all free.) After you've created an account, you can also browse and install apps from the Squeezebox Radio device. Additions made via your Web browser will be reflected on the device and vice versa.

The Squeezebox Radio also has an Ethernet port for wired connections, a headphone jack, and a 3.5mm port, so you can connect it to a portable audio player with the included cord. And if you're aiming for true wireless portability, consider the optional remote and battery accessory pack ($49.99), which should be available by the time you read this.

Perhaps the best aspect of the Squeezebox Radio is that it blasts this slew of music out of impressive speakers. The sound from the 3-inch woofer and 3/4-inch high-definition tweeter is clear and rich. The volume range is impressive, too. The Squeezebox Radio has enough oomph to fill even large rooms with music. And with the considerable assortment of available tunes, you'll never be at a loss for what to play.

Head-To-Head: GPS Devices
Stay On The Right Track

GPS (global positioning system) navigation has revolutionized the way we travel. With voice-guided, turn-by-turn directions, you can travel through unfamiliar territory without ever consulting a traditional map or fearing that you'll get lost. GPS has become so popular that the capability is now often built into our cars or mobile phones. If you don't have a GPS device, a portable automotive model is often the wisest way to go, because you can transport it from vehicle to vehicle, and it will typically include advanced POI (point-of-interest) features to enhance your travel. Here, we check out four recent models from Garmin, Magellan, and TomTom.



Garmin Nuvi 1690

Garmin Nuvi 1690

The Nuvi 1690 comes with a free two-year subscription to Garmin's nuLink! service ($60 a year after the subscription expires), which provides real-time traffic alerts to route you around congestion, as well as Google Local Search to increase your options for nearby POIs. The 4.3-inch full color touchscreen was easy to read, and with Garmin's Lane Assist technology, we were instructed which lane was appropriate for the interstate exit we needed to take. We can see the Lane Assist feature saving us from a lot of missed exits on busy freeway systems.

The interface is fairly intuitive, and the on-screen and menu options are clearly labeled. For instance, the Nuvi 1690's splash screen shows status icons for the GPS signal strength, remaining battery, nuLink! signal strength, and navigation mode. You can choose among modes for driving, biking, and walking. Garmin integrates a Bluetooth connection and microphone to allow you to make and receive phone calls directly through the GPS device. You can even make calls to a POI by tapping the phone number in the location information.

One uncommon feature is Where I Parked, which allows the Nuvi 1690 to mark your location when you remove it from the car. The nuLink!'s real-time traffic access came in handy during our testing, because it alerted us to an impending slowdown and automatically offered us another route. We can also see how real-time weather updates would be helpful for busy travelers who don't have time to catch the full weather report in the morning.

The Nuvi 1690 offers a sturdy base, and the strong suction cup helped to keep the GPS device steady while driving. We also liked that the device was easy to connect and remove from the cradle. The Nuvi 1690's speaker was loud, which allowed us to clearly hear instructions while driving on the interstate with winds near 50mph. We found that nuLink!'s real-time traffic, gas prices, weather, flight status, and movie time information added value to the traditional GPS device tools.

Magellan RoadMate 1700

With a 7-inch widescreen color display, the RoadMate 1700 provides a clearly visible, easy-to-read map. We also like how the interface is laid out to keep the map from appearing cluttered. At the top of the screen, Magellan lists your next exit and distance until you'll turn. The bottom of the screen displays your current speed and large buttons to zoom in, zoom

With voice-guided, turn-by-turn directions, you can travel through unfamiliar territory without ever consulting a traditional map or fearing that you'll get lost.

BUYING TIPS

- **Walk, bike, and drive.** Some automotive GPS devices are only capable of providing driving directions, while others offer routes for walking and biking based on the best route for the respective mode of transportation. If you'd use the GPS device for all three, look for a model that offers options for alternative transportation.
- **Voice assist.** Most current GPS models feature text-to-speech, which tells the street name rather than simply saying "turn left ahead," and some models can also provide voice prompts for which lane you should be in. Some GPS devices with microphones can also understand voice commands, so you don't have to type them in.
- **Internet-connected.** Some new GPS devices have a built-in cellular connection to access real-time data from the Internet. Most Internet-connected models include access to Google Local Search, as well as current traffic, gas prices, and weather information.

out, or access the menu. The screen features an 800 x 480 resolution, which provides a crisp image; it is also easy to read in direct sunlight.

In terms of features, Magellan includes a list on the bottom left of the screen that indicates your next exit and POI, which is handy because you don't need to access the menu or search for the POI to see what's ahead. The RoadMate 1700 also offers Magellan's OneTouch access, which is an icon at the top right you can press to access your most recently selected and favorite destinations. From the OneTouch menu, Magellan lets you assign a few custom buttons, such as the POI categories or destinations you use the most. Some buttons, such as the Home and Previous buttons, cannot be assigned a favorite.

Magellan RoadMate 1700

The extra screen real estate allows Magellan to add some helpful traveling tools, such as its Highway Lane Assist that shows you a highway sign similar to what you'd see (with the correct number) to effectively guide you on the freeway or interstate. Within the route plan, you can set up multiple stops and let the RoadMate 1700 optimize driving time between destinations.

With its large screen, the RoadMate 1700 is definitely meant to be used in the car. Not only does its large size make it difficult to carry, but Magellan indicates it only has 30 minutes of battery life, and it offers no walking directions. That being said, the RoadMate 1700 excels as an automotive GPS unit, and people who will benefit from a larger screen or those who have difficulty seeing screens in direct sunlight will appreciate the RoadMate 1700's screen. It also offers an A/V input for displaying video, so you could play a movie stored on your portable media player or mobile phone on the 7-inch widescreen.

TomTom Ease

Next up is the aptly named TomTom Ease. As soon as you turn it on, the Ease provides a menu that offers a Plan Route and a Browse Map option, and the bottom of the interface shows menu buttons for Sound, Night, Help, Options, and Done. It's about as simple a GPS menu as you can wish for. In terms of functionality, the Ease provides text-to-speech to read aloud street and destination names while you drive, and it can also calculate the fastest route possible based on the average speed of traffic on a given road. The 3.5-inch touchscreen isn't the biggest around, but the screen is large enough that you won't have trouble viewing the map or directions.

In our testing, the Ease was certainly easy to learn how to use. Within minutes, we acquainted ourselves with all the settings and features, so this model is ideal for members of the family who are less technologically savvy. When you're in the Map view, you can press the POI button to change the types of places, such as car washes, ATMs, golf courses, and movie theaters, that are marked on the map. For travelers who are cruising around an unfamiliar town, the landmarks are a great way to find what you need without searching for specific POIs. Marked gas stations

TomTom Ease

even feature the company logo to help you spot the station from the road.

Another handy feature is the ability to position the cursor on the map and tell the Ease to find a POI near a stopping point or destination. For instance, if you know that you're planning to stop for food at the next exit, you can scroll ahead on the map, mark the destination, and start planning what restaurant you'll stop at. The Ease can utilize TomTom's Map Share technology, which lets you update and personalize your GPS device's map, so you can fill in a missing POI.

TomTom XL 340•S Live

The XL 340•S Live offers a 4.3-inch widescreen display, text-to-speech, and access to TomTom's Live Services, which retrieve real-time data from the Internet. For example, the GPS unit can provide access to current traffic conditions for your route and offer alternative guidance based on delays, accidents, and congestion. It also provides real-time fuel prices, weather, and Google Local Search to expand your POIs to Google's comprehensive local search listings. When you purchase the GPS device, you get a free 30-day trial, and it is available for $9.95 a month after that.

We found that the Live Services were a great addition to the GPS device. For example, we wanted to find a recently opened bookstore in town, and although it was not in the GPS unit's POIs, Google Local Search found it and also provided a local phone number. In terms of use, we liked that the screen was bright enough to read in daylight and that the buttons on the touchscreen interface were large enough that we could easily select what we needed. TomTom smartly places the link to the Live Services traffic on the right-hand side of the screen, where you can quickly access it to look at the traffic conditions on your route. The XL 340•S Live also alerted us to new accidents and offered route guidance to avoid the trouble.

TomTom XL 340•S Live

Our one complaint is that TomTom could have included a mount that more securely attached to the GPS unit, because it seemed flimsy. The best feature was probably the Live Service's Fuel Prices feature, which saved us money by telling us the cheapest gas in town. You can configure the Fuel Prices utility to look for prices by your preferred fuel type. And if you live in a town where traffic congestion is the norm, the XL 340•S Live could also save you gas by reducing the time you spend on the road.

BY NATHAN LAKE

GPS has become so popular that the capability is now often built into our cars or mobile phones.

PRODUCT INFORMATION

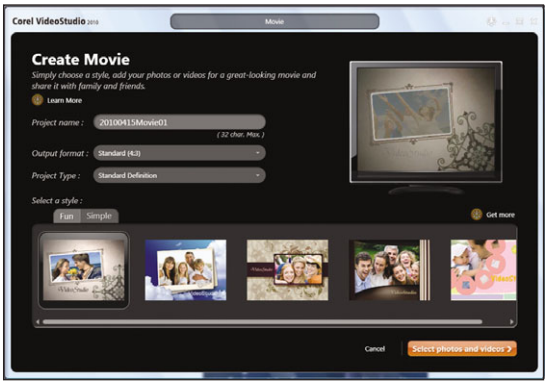
	Price	Company	Contact Information	URL	Notable Features
Nuvi 1690	$449.99	Garmin	(913) 397-8200	www.garmin.com	This device mixes high-end built-in features with Internet connectivity for up-to-the-minute travel updates.
RoadMate 1700	$299.99	Magellan	(800) 707-9971	www.magellangps.com	The large 7-inch widescreen display provides an expansive map.
Ease	$119.95	TomTom	(866) 486-6866	www.tomtom.com	The Ease is designed to be simple to operate and learn—and it is.
XL 340•S Live	$199.95	TomTom	(866) 486-6866	www.tomtom.com	The Internet-connected GPS device provides a variety of real-time features.

Dual-Mode Editing
Corel VideoStudio Pro X3

$89.99 | Corel
(877) 582-6735 | www.corel.com

WinXP Vista Win7

With VideoStudio Pro X3, Corel has released a multimedia mini-suite that lets novice enthusiasts get up and running quickly yet offers enough functionality to satisfy them as they learn. It offers two modes (actually two different programs bundled together) that enables users to tailor the interface and level of involvement to the task at hand.



Key Features: This video-editing software features extensive support for external devices and social networking sites.

Starting Gate

Getting going with VideoStudio requires a little patience, as the download is huge (more than 600MB) and installation can take an hour or more. (Buy the boxed version to avoid the giant download.)

When you first run the program, a splash screen opens offering four options—Advanced Edit (open VideoStudio Pro X3), Easy Edit (open VideoStudio Express 2010), DV-to-DVD Wizard, and Burn (DVD Factory Pro 2010). You can also access all four options—as well as a very basic painting utility called Painting Creator—from inside VideoStudio Pro X3.

Easy Does It

Easy Edit is designed for making movies very quickly—no editable timelines; no fancy filters. Just drag video clips or files with animations or transitions (three seconds or longer) into the Media Tray, select Create, click Movie, and pick a style. (There aren't many, but you can download free templates and fonts from Corel.)

Easy Edit has a media organizer that is a bit confusing at first. It searches your hard drive for likely multimedia folders and offers an Import option and lets you add more from various sources. However, to see media other than video, you must click the nearly invisible Down arrow at the right of the Video button.

In addition to creating movies, Easy Edit lets you print images in a variety of formats, create and print CD/DVD labels, and share your images and movies. One final thing—Easy Edit will let you drag music files to the Media Tray, but you cannot create a movie including them.

Advanced Edit

Much more useful for most of us is Advanced Edit (VideoStudio Pro X3). Use the Capture option to scan DV tape, capture media, or import it from digital media (including your PC) or a mobile device. Once you select folders to import, you can choose via checkbox which clips/images to display. During import, VideoStudio can add files to the library, insert them in your project's timeline, or both.

The Edit button lets you tweak files, access the timeline (adjust sound and video timings, split or trim clips, etc.) or use the storyboard to add, delete, or rearrange clips. (The default display is Timeline; the movie frame icon switches you to Storyboard view.)

Click the Share button or the Export option on the File menu to view, export, burn, or share your masterpiece in a variety of ways including upload to YouTube or Vimeo, export to mobile device, and output to HDV (high-definition video) or DV (digital video).

The Extras

The final two functions in VideoStudio Pro are the DV-to-DVD Wizard and Burn. DV-to-DVD Wizard takes your DV straight to DVD with the added bonus of scene marking. Burn opens DVD Factory Pro 2010, a nifty utility for burning a variety of media to DVD. We don't have room to detail them further, but both worked well and are easy to use.

In fact, VideoStudio Pro X3 has a lot more features, and we advise users to avail themselves of the helpful tutorials to master them. Overall, this video-editing software provides everything novice-to-intermediate users should need to create good home videos. A fully functional trial will get them going.

BY JENNIFER FARWELL

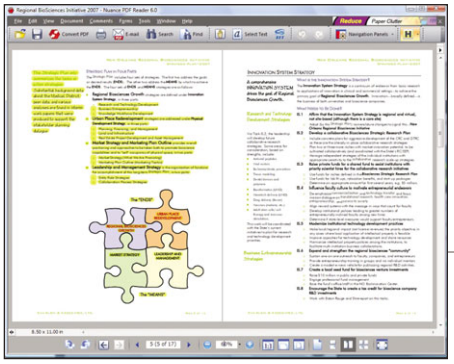
Work With PDFs

Nuance PDF Reader

Free | Nuance
(781) 565-5000 | www.nuance.com

WinXP Vista Win7

Nuance promotes its new PDF (Portable Document Format) utility as a document "reader," but the tool is much more. PDF Reader replicates the basic functions found in Adobe Reader, such as searching, changing the page display, and selecting text to copy. However, PDF Reader builds on those functions in a totally unexpected way.



It supports adding, saving, and printing document comments (highlight, cross out, or underline) as well as PDF form highlighting and execution. You can also convert PDFs to Word, Excel, WordPerfect, and other formats, although the actual conversion takes place on the Internet. (PDF Reader transports you to a Web page when you click the program's Convert PDF button.)

PDF Reader doesn't support the placement of digital signatures unless the field is already in a fillable form and lacks a pan and zoom window and two specialized tools (object data and geospatial location analysis). The trade-off is integration with Microsoft SharePoint and support for Microsoft XPS (a format similar to PDF).

Key Features: This advanced PDF reader offers commenting, exporting to other formats, forms execution, and more.

A final bonus is the user-friendly interface, with buttons for commonly used functions and navigation panels for reviewing comments, browsing bookmarks, and more. During installation, you are given the option to disable or enable JavaScript. Disabling it is more secure, but you'll lose support for dynamic forms created with Adobe LiveCycle. Overall, we cannot imagine why anyone wouldn't want this nifty utility.

BY JENNIFER FARWELL

Digitize Images

VueScan Professional

$79.95 | Hamrick Software
edhamrick@aol.com | www.hamrick.com

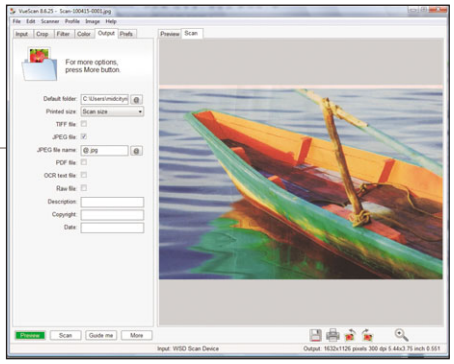
NT Windows 2000 WinXP
Vista Win7 Mac Linux

VueScan is the world's most widely used software (per the developer) for digitizing images from flatbed and film scanners. We can see why.

VueScan supports 1,200 scanner models (Windows; fewer for Mac OS X and Linux), including outdated scanners without drivers for later versions of Windows. In our tests, VueScan recognized our scanner (an Epson multifunction device) and image editor (Photoshop) immediately. Upon scanning, it displayed the image simultaneously in VueScan and Photoshop.

However, VueScan is far more than a broadly compatible scanner program. Within VueScan, you can perform functions sometimes lacking in scanner software, including applying basic filters, rotating the image, and batch scanning multiple images.

Key Features: VueScan Professional provides wide support for scanner models, even in Windows 7. It also adds support for RAW format and other tweaks.



Furthermore, it offers direct output to a variety of formats, including TIFF (Tagged Image File Format) and PDF, and can perform OCR (optical character recognition) and then output in text format. VueScan can even output a TIFF and JPEG (Joint Photographic Experts Group) at the same time in different resolutions.

We tested the Pro version, which adds more color operations and support for calibration and output to the RAW format. If you don't need these features, the Standard version costs $39.95. Try it free and decide for yourself. If you frequently scan printed documents or film images, we think you'll love it. We did.

BY JENNIFER FARWELL

News, Views & Tips

Compiled by Joseph Moran

Windows News

First TVs Get Windows 7 Logo

Toshiba's UX600 Cinema Series LED televisions, which come in 40-, 46-, and 55-inch models and are equipped with both Ethernet and Wi-Fi networking, have become the first TV sets to sport the Compatible With Windows 7 logo. The certification means that Win7 PCs can send streaming audio, video, and pictures directly to a UX600 TV via Windows Media Player's Play To feature.

Microsoft Fix It Center Troubleshooting Tool Enters Beta

Microsoft has begun beta testing its Fix It Center, a free utility that provides a series of automated troubleshooters for common problems in Windows XP/Vista/7. The utility, which scans a PC for problems based on the specific hardware and software that's installed, is available for download at fixitcenter.support.microsoft.com/Portal.

Promotion Lowers Price On Windows Anytime Upgrades

For a limited time, Microsoft is offering cut-rate Windows Anytime Upgrades when purchased with a new PC through participating retailers (including the company's own online store at store.microsoft.com).

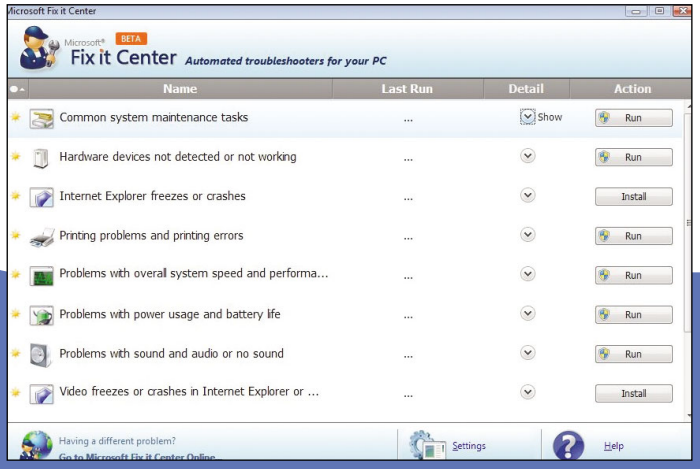
During the promotion, which ends on July 3, the price of a Windows 7 Starter to Home Premium upgrade drops from $79.99 to $49.99, while a Home Premium to Professional upgrade gets a more modest price cut from $89.99 to $79.99.

Windows Tips

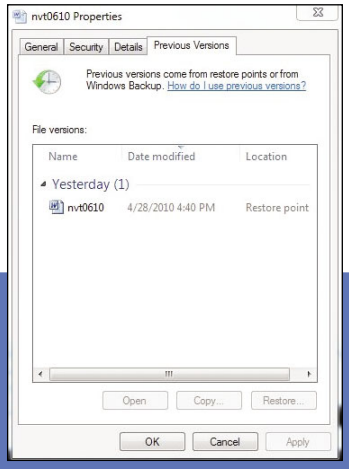
Restore Previous Versions Of Changed Files (Windows Vista/7)

You probably know that a visit to the Recycle Bin will typically let you recover an accidentally deleted file quite easily. But what happens if you're editing a file such as a document or photo and mistakenly save it with unwanted changes? If you have any version of Win7 (or Vista Business/Ultimate) there's a good chance you can recover an earlier version of the file without much fanfare thanks to the System Protection feature, which automatically creates restore points with backup copies of important system settings and data files. (Restore points are typically created on a daily basis, as well as before certain events such as the installation of new programs or operating system updates.)

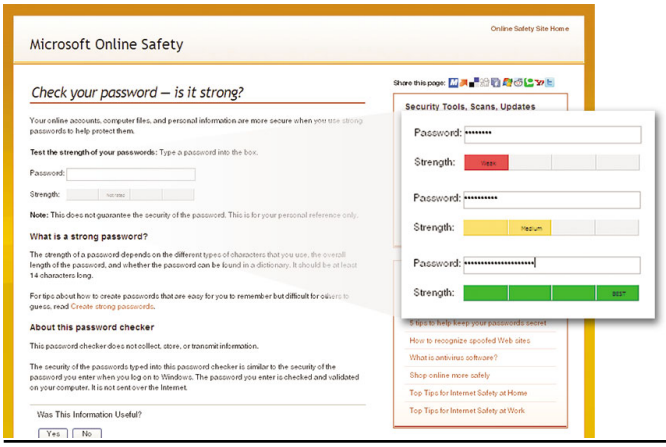
To access restore point versions of an accidentally modified file, right-click the file and choose Restore Previous Versions. When the list of older copies of the file appears (this may take a moment), highlight the most recent one (or whichever version you want) and click Restore to undo your changes. To view the contents of a file before restoring it, double-click it or click Open, and if you decide you'd prefer to restore a prior version of a file without overwriting the newer version, use the Copy button to save a new copy of



This free downloadable utility from Microsoft scans a Windows PC for system-specific problems.



Right-click a file you've accidentally saved and choose Restore Previous Versions to retrieve an older copy.



the file to a different location. The Restore Previous Versions option works with folders, too, so you can use it to recover earlier versions of multiple files in a folder.

Note that by default, System Protection is only enabled on the drive that contains Windows (usually the C: drive), so if you store data on other drives or partitions, you need to enable System Protection for them before Restore Previous Versions will work. To do so, open Windows Explorer and click System Properties and System Protection. Then select a drive. Click OK in Vista, and you're done. In Win7, click Configure, click Only Restore Previous Versions Of Files or Restore System Settings And Previous Versions Of Files, adjust the slider bar to determine how much drive space will be used for restore points, and click OK.

Check Your Password Strength Online

Using a password to protect access to your Windows and various Web site accounts is important. But not all passwords are created equal. If a password is too short, contains dictionary words (or a proper name, such as Joseph), or doesn't use a mix of numbers and uppercase and lowercase letters, it may not offer the protection you think it does.

With Microsoft's online password checker (tinyurl.com/lyxv33), you can check the strength of a password you use or are planning to use. As you type in your password (which isn't transmitted across the Internet), it's rated weak, medium, strong, or best based on the length and the characters used. The site also provides tips on Internet safety, including how to create strong passwords that are easy to remember.

With Microsoft's online **password checker,** you can check the strength of a password you use or are planning to use.

Microsoft News

Microsoft: IE Add-Ons A Mixed Bag

If you experience sluggish performance or frequent crashing in Internet Explorer, you may want to dial back the number of browser add-ons you use. According to a Microsoft IE 8 performance white paper, add-ons (such as those ubiquitous toolbars) are frequently responsible for browser slowdown and account for over 70% of crashes.

For more information and tips on how to troubleshoot and manage add-ons, you can download the white paper at tinyurl.com/3xkr99c.

Microsoft Debuts Pair Of "Social Phones"

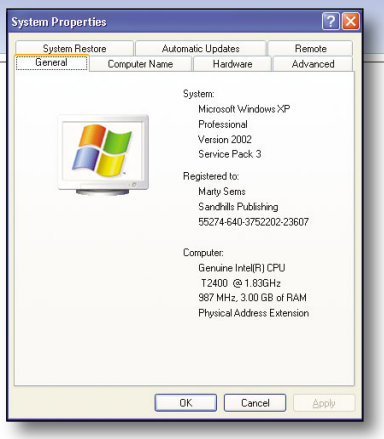
Microsoft has launched a new family of "social phones," dubbed Kin, which the company is aiming at people—particularly younger ones—who are especially active in social networking. The phones, dubbed Kin One and Kin Two, are built by Sharp and will be sold through Verizon Wireless in the United States.

The Kin One is a compact and square-shaped phone, while the higher-end Kin Two sports a more conventional rectangular design with a larger and sharper display, more memory, and a higher-resolution camera. Both Kin models sport touchscreens and slide-out keyboards.

The Kin phones use a custom version of Microsoft's Windows Phone 7 operating system and feature a home screen called Kin Loop, which integrates the latest info from services such as Facebook, MySpace, and Twitter. Also included are Kin Spot, a place for sharing various types of information, Kin Studio, which automatically backs up all phone information online so it's accessible via a standard Web browser, and integrated Zune media player software. For more information about the Kin, see "Connect With Your Kin" on page 14.

Microsoft's new Kin phones are all about social networking.

Windows XP
Find Important Info



System Properties throws several bits of important info at you, such as how much RAM you have and whether you have 64-bit or 32-bit Windows XP installed.

Ever notice that when you need technical support for your computer, you're asked for certain bits of information? Namely, which OS (operating system) you have, which Service Pack is installed, how much RAM you're running, and so on.

These questions echo the ones a doctor asks you in his office when he's trying to suss out what ails you. "How long have you had these symptoms? Do you have any allergies? What sort of medications are you taking right now?"

Just like a doctor, a tech support rep—and by that we mean anyone who is helping you with your computer problem, be it a friend, a neighbor, a family member, or someone from the IT department at your workplace—needs answers to a few basic questions in order to frame a plan of troubleshooting action. Along with the de rigueur query, "Have you installed anything new or browsed to an unfamiliar site lately?," such questions let the person helping you search for solutions to your problem. They also help her rule out common issues that don't apply to your situation.

Of course, it begs the question: What if you don't know where to find the answers to these computer inquiries? For instance, you might know that your PC has Windows Vista on it, but other than that, the rest of your system's specs may never have been important enough for you to notice them.

That's our reasoning behind this somewhat unusual but sorely needed article. Bear with us as we depart from our usual "how-to" tutorials for a welcome return to the basics.

System Properties

Here's a nice bit of news: In Windows XP (and other versions), Microsoft made it nice and easy to find the lion's share of the computer information you occasionally need. Much of it is located in a powerful settings panel known as System Properties.

To open it, press WIN (the Windows logo key) and PAUSE at the same time. Another way to launch System Properties is to click Start, Control Panel, and Performance And Maintenance and then double-click System.

System Properties pops up with its General tab front and center. Here, you'll see a list of useful tidbits, including your version of WinXP (Home or Professional), the Service Pack you have installed (such as SP3), your CPU's model and clock speed (such as Intel T2400 1.83GHz), and your RAM speed and amount (such as 800MHz, 2GB).

In addition, the General tab also tells you whether you have a 64-bit version of WinXP installed. If so, you'll see x64 Edition listed after the version of Windows, as in "Microsoft Windows XP Professional x64 Edition." If you don't see x64 Edition, you're using 32-bit WinXP.

Drive Data

Like many other OSes, WinXP doesn't like it when it runs low on hard drive space. A lack of free storage can affect Windows in a number of ways, and none of them is particularly good. Thus, your tech support contact may ask you how much hard drive space you have left.

Windows provides you with a couple of simple ways to find this fact. The first involves the hard drive's Disk Properties panel.

First, launch Windows Explorer by pressing WIN-E or by right-clicking Start and selecting Explore. Next, in the Folders column along the left side, right-click Local Disk (C:) and choose Properties. Disk Properties will show you your hard drive's capacity as a pie chart. The blue section represents files on the drive, and the purple (or pink) part shows you how much unused space there is. Look at the Free Space line above the chart for the figure your tech support rep wants, such as 13.6GB.

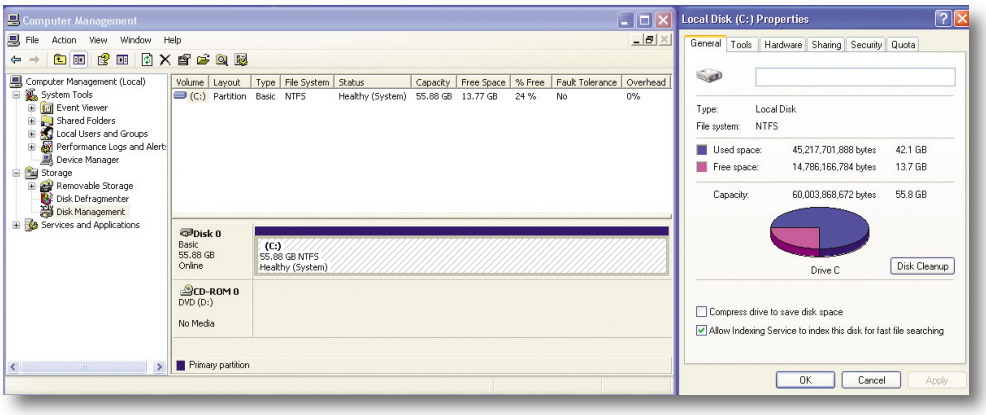
Disk Management also tells you the amount of available space on your drive as well as that figure expressed as a percentage of the total capacity. To launch it, click Start, Control Panel, Performance And Maintenance, and Administrative Tools. Double-click Computer Management and select Disk Management. Maximize the window, because, like Windows Update, Disk Management usually opens too small to display much.

The upper-right pane of Disk Management lists the drives on your PC. Find your C: drive, check its Free Space column, and report that figure (such as 38.44GB) to your tech support helper. The % Free column just to the right

provides you with the percentage of the total that the unused space represents.

Of course, we've assumed that your Windows installation is on the partition (logical section) of your hard drive with the drive letter C:. For most users, this is a safe bet. Probably 99% of Windows installations are located on the C: partitions of their respective hard drives.

The exceptions often involve dual-boot (or multiboot) systems, which are computers that can start up with a choice of two (or more) OSes. Such PCs generally store each OS on a different hard drive partition. Depending on the OS and its location, it might be running on a partition with a drive letter such as E:, F:, or what have you. In Disk Management, the partition with (System) in its Status column, or rather Healthy (System), is the Windows partition.



Disk Management and Disk Properties are two places to find out how much hard drive space you have left.

Installed Updates

Microsoft regularly issues patches, hotfixes, and other updates for its software. Because one might cure a specific problem on your PC (or, in rare cases, cause it), tech support may ask you to verify whether your computer has a particular update installed, such as KB975561.

Click Start, click Control Panel, and click Add Or Remove Programs twice. The list of currently installed programs will appear. Make sure that the Show Updates checkbox at the top of the panel is checked and then scroll down the list to Windows XP – Software Updates. Here, you'll find individual OS updates, along with their installation dates. Elsewhere, you'll find other updates for Windows and other Microsoft products, including WinXP Service Pack 3 and Windows Internet Explorer 8 – Software Updates.

Product Key

WinXP requires you to enter a 25-character alphanumeric product key as you install it. Also known as the CD key, the installation key, the license key, or the serial number, the product key has the format xxxxx—xxxxx—xxxxx—xxxxx—xxxxx. You can find it on the COA (Certificate of Authenticity) on your installation disc package or on a sticker on the case of your PC. Then again, maybe you can't.

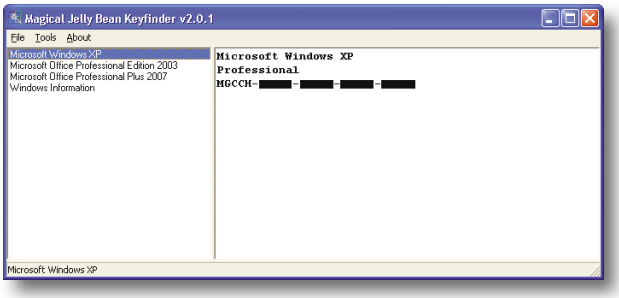
If your product key is nowhere to be found, but you need to locate it for a reinstall, there are a few third-party applications that can help you unearth it from within Windows. We used a freebie called Magical Jelly Bean Keyfinder 2.0.1 (magicaljellybean.com).

Download Magical Jelly Bean Keyfinder's compressed installation file (it was called Keyfinder.2.0.1.zip in our case) and decompress its contents by right-clicking it and selecting Extract All. One of the three files inside the resulting folder is Keyfinder.exe. Double-click it, and Magical Jelly Bean Keyfinder will launch with your WinXP product key on its front page. You can also view the installation keys for some other software on your computer, such as Microsoft Office.

Points Of Reference

To find even more info about your system, such as device model numbers, try Device Manager (under System Properties' Hardware tab) or the free utilities CPU-Z (www.cpuid.com) and GPU-Z (tinyurl.com/y43mxop). Also, the Sandra Lite (free; www.sisoftware.net) benchmark can reveal much about your components and software. Spend a little time digging around in WinXP, and there's no point salient to troubleshooting that you won't be able to find. ❚❚

BY MARTY SEMS



Magical Jelly Bean Keyfinder is a free program that reveals your Windows XP product key from within Windows.

Windows Vista

Connect Your PC & Phone With Bluetooth

The BlackBerry Storm2 has Bluetooth technology built-in, and the Belkin Bluetooth Adapter plugs into your USB port to deliver Bluetooth connection capabilities to your PC.

Mobile phones today can snap photos, play videos and music, and store a variety of multimedia content. At some point, you might want to transfer photos or videos shot from your phone to your computer or move a document from your computer to your phone so you can review it on the go. With Bluetooth technology, you can wirelessly transfer all types of files between your computer and phone for quick and convenient sharing.

Bluetooth is a short-range wireless technology that differs from other wireless technologies, such as Wi-Fi. Bluetooth technology, which uses radio waves to connect devices that are within about 33 feet of each other, also consumes less battery power than other wireless connectivity options. For devices to communicate over a Bluetooth connection, both must have internal Bluetooth chips or be equipped with a Bluetooth adapter.

Pairing devices (the process of connecting devices via Bluetooth technology) can be tricky if you aren't sure how to do it. In this article, we'll explain how to pair a computer (connected to a Bluetooth adapter) with a mobile phone. We used the Belkin Bluetooth Adapter ($39.99; www.belkin.com) and a RIM BlackBerry Storm2 9550 ($199.99 with two-year contract; www.verizonwireless.com) smartphone. Specific directions for other phones will vary, but you can use this as a guide to connect your Vista PC using any Bluetooth adapter and any Bluetooth-enabled mobile phone.

Install The Bluetooth Adapter

Generally, Bluetooth adapters come with an installation CD that includes the device driver and any other software you might need. So, begin by inserting the CD and then plug your Bluetooth adapter into a USB port in your computer. If the CD does not automatically start running, you will need to manually run the CD by opening the Start menu, clicking computer, and then double-clicking the Bluetooth CD icon.

For the Belkin Bluetooth Adapter, you'll see a welcome screen after launching the CD. Click Next to get started. If you are prompted by the User Account Control dialog box for permission, click Continue. The Bluetooth CD will now begin preparing your computer for installation (which could take a few minutes). When the InstallShield Wizard box pops up, click Next. Then accept the terms of the license agreement by selecting the appropriate bubble and choose Next. If you're happy with the automatically chosen destination folder (where the software is stored once it's been downloaded), select Next. Otherwise, click Change and choose a different destination folder. Click Install to install the software.

Once the software is installed, select Finish and then choose Yes to restart your computer (or No if you plan to restart your computer and use the Bluetooth Adapter later).

Prepare Your Phone

Before you try to pair your phone with any device, make sure the Bluetooth connection is on and your phone is set to discoverable or visible mode. Discoverable/Visible mode will enable other Bluetooth devices to find the Bluetooth radio signals sent out by your phone. Open the Wireless Connections menu in your phone, which could be located under Options or Settings. Select Bluetooth and then power on the Bluetooth connection. Under Bluetooth Options (or a similar label), set the device to be discoverable or visible to other devices. You might have the option for choosing a name for your phone. If so,

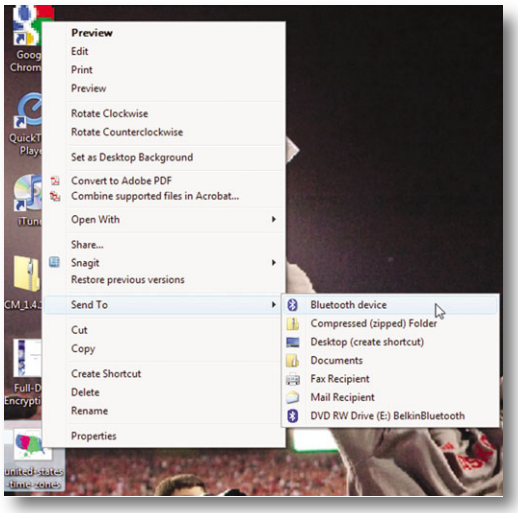
choose a name that will help you identify it on other Bluetooth-enabled devices.

Connect Your Phone & Your Computer

Regardless of the type of Bluetooth adapter you have, you can use the Bluetooth options in your Control Panel to pair your phone and your computer. From the Start menu, open the Control Panel, choose Hardware And Sound, and then select Bluetooth Devices. On the Options tab, check the boxes corresponding with Allow Bluetooth Devices To Find This Computer and Allow Bluetooth Devices To Connect To This Computer. Click Apply.

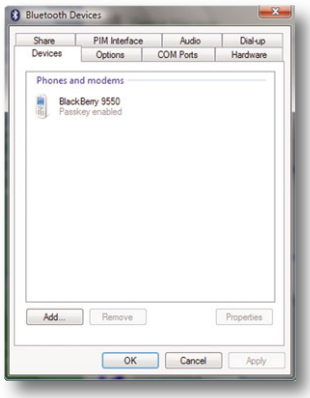
Go to the Devices tab and then click Add. Checkmark the My Device Is Set Up And Ready To Be Found box and then click Next. Your phone will show up in the list of available Bluetooth connections. If it does not, go back and make sure the Bluetooth connection on your phone is powered on and that it is discoverable or visible to other devices. Select your phone from the list and then click Next.

The next step is to enter the passkey. Enabling a passkey whenever you connect devices via Bluetooth is important, because it ensures that unauthorized users cannot intercept the Bluetooth connection and gain access to the data on your devices. This is especially important to remember when you're in public places, such as a coffee shop, airport, or library. If your phone or device comes with a specific passkey, it will be listed in the users manual or in other literature included with the product. Otherwise, you can decide to have your computer generate a random passkey, make up your own passkey, or elect not to use a passkey. At the bottom of this menu, you will see the recommendations for choosing your own passkey. For instance, your passkey should be between eight and 16 characters long, and a long passkey will provide better security than a short one.



To send files to your phone via Bluetooth, right-click the file and select Bluetooth Device under Send To.

If you choose to use a passkey and then click Next, your phone will prompt you to enter it in order to finish setting up the connection. You might also have to accept a connection request from your computer on your phone. Finally, your phone should show up under the Devices tab in the Bluetooth Devices dialog box.



You can connect devices via Bluetooth using the Bluetooth Devices menu, found under Hardware and Sound in the Control Panel.

After The Connection

Once your phone and your PC are connected, you can share files between the two. To send a file from your BlackBerry Storm2, for example, open the file you want to share (on your phone) and then press the Menu key. Choose Send Using Bluetooth and then select your computer as the device you want to share with. Once the file is transferred, your PC will prompt you to accept the request from your phone. You can choose to allow it for this request only, to always allow files from your phone, or to only accept requests for a specified period of time. Your file will then be transferred to your computer.

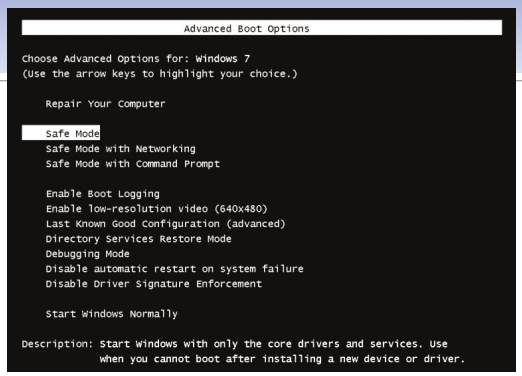
To send files from your computer to your mobile phone, right-click the file (on your PC) and then choose Bluetooth Device under the Send To menu. To find your phone, click Browse, select your phone from the list of connected devices, and then click OK and Next. From the main menu on your phone, select the Media folder and then choose Receive Using Bluetooth. Wait while the two devices connect. When prompted, choose the location you want the file to download to on your phone and then select Save. The file will then be transferred. Click Finish on your PC when it's done.

A Convenient Connection

When you use a wireless Bluetooth connection, your PC can communicate wirelessly not only with your mobile phone but also with other wireless peripherals, such as a mouse, keyboard, and headphones, as well. Additionally, you can enjoy the convenient and clutter-free benefits of wireless devices. ▮▮

BY TESSA WARNER BRENEMAN

Windows 7
System Recovery Tools Help Forestall Disaster



Press F8 on bootup to access Windows 7's Advanced Boot Options screen.

Not everything we do in life is irrevocable. Sometimes we really do get "do-overs," and not just in amateur sports, either. Shouldn't you get the occasional technology do-over?

Microsoft's latest OS (operating system) provides a series of tools that you can use to rescue your ailing computer. Windows 7's system recovery utilities are more sophisticated and more useful than similar utilities provided in earlier versions of Windows. We'll take you on a tour of these helpful tools.

Access The System Recovery Options Menu

There are two ways to access the System Recovery Options menu, depending on how your system is configured.

Some Win7 computers already have the system recovery tools installed, in which case accessing them is straightforward:

1. After removing any CDs, DVDs, or other media from your system, restart your computer.
2. As the system boots, press F8 every second or so; the system will boot into the Advanced Boot Options screen. (If the Windows logo appears, you've waited too long to press F8; reboot and try again.)
3. Select Repair Your Computer and press ENTER. The five system recovery options (discussed later) will display.

If the system recovery tools were not previously installed on your system, you'll need to use either your Win7 installation disc or a Win7 system repair disc to access the recovery options:

1. Insert your disc and reboot the computer. Boot from the DVD by pressing any key when prompted to do so. You'll only have a few seconds in which to select that option; if you wait too long, the system will boot normally, and you'll need to try again. If the computer isn't configured to boot from DVD, you'll have to enter the BIOS (Basic Input/Output System) and move the hard drive to the top of the boot order. To do so, reboot your system, pressing F2 or DELETE during the bootup. If it's not obvious from the BIOS menu, you may need to check your computer's manual to determine which menu option sets the boot order.
2. If Windows prompts you to, choose a language and click Next. Then, select the Repair Your Computer option. (This process may vary slightly by Win7 version and if you use a repair disc. Follow any on-screen prompts to choose the installation you'd like to repair until you reach the System Recovery Options dialog box described in the next section.)

By the way, if you're using a tablet or other touchscreen system, you'll probably need to install a keyboard and mouse to utilize most of the Win7 system recovery tools. Also, you may need to turn off your antivirus application; it may refuse to allow some of the system recovery tools to operate.

Your System Recovery Options

Once you select Repair Your Computer, the system will boot into Windows and display a System Recovery Options dialog box. Select a keyboard type, click Next, and log on as either a user or an administrator. Logging on as an administrator will give you access to all the system recovery tools.

Startup Repair. The first option, Startup Repair, is often the most useful recovery tool. It attempts to correct problems that may be affecting your system's startup: boot-related lockups, slow boots, Registry issues, failure to boot, etc.

Select the Startup Repair option. The system will scan your computer, looking for problems as it goes. If you have a corrupted Registry or damaged system files, Startup Repair can often correct such problems. Your system may reboot during the repair process, so don't panic if that happens.

The utility examines a variety of system conditions, including hard drive integrity, status of updates, and the computer's boot logs. If it finds errors, it will attempt to correct them. Once Startup Repair finishes, you can select View Diagnostic And Repair Details to see what it found. If the utility finds problems that it cannot correct, Startup Repair will display a problem summary; in some cases, it may list links you can use to find more information about the issue.

Startup Repair cannot resolve all issues. If you have installation problems, for example, there may not be anything that Startup Repair can do about that. Similarly, Startup

In general, Windows 7's five system recovery options are displayed in order of increasing sophistication, so attempt repairs in this order when possible.

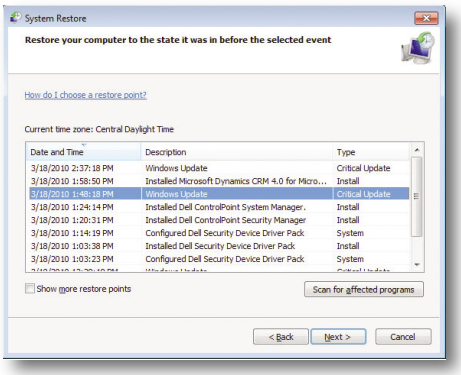
Repair is neither a backup nor a restore utility, so it can't help you recover those lost photos or that novel you started writing but which seems to have disappeared.

System Restore. Another popular Win7 recovery tool is System Restore, a utility whose lineage goes back to Windows Me, but which has been improved in Win7. (Note that if your system is bootable, you can also access System Restore from the Start menu. Click Start, All Programs, Accessories, and System Tools.)

System Restore uses a series of saved restore points to allow users to "roll back" to earlier versions of the system, giving you a way to revert to previously installed (and, one presumes, working) versions of the Registry, system files, applications, etc.

Win7 will automatically create restore points prior to a program or driver install, before a Windows update, and whenever a restore point has not been created in the past seven days, but you can also create one manually. To do so, go to the Control Panel and select System And Security, and then System. On the left side of the window, select System Protection to open the System Properties dialog box. Click the Create button. (*NOTE: To create restore points manually, System Protection may need to be turned on. You can use the System Properties dialog box options to turn it on, if necessary.*)

To use System Restore to restore to a previous version, select System Restore from the System Recovery Options dialog box. Click Next. The system will present a list of restore points to which you can restore your system. Select one that was created prior to the point at which you began having problems. Remember that when you restore, you will lose updates and applications installed after that date.



Choosing an appropriate restore point is a matter of selecting one that was created prior to the point at which you began having trouble.

System Image Recovery. If you were prescient enough to have created a system image backup prior to the point at which your troubles began, you're in luck. You can use that backup to replace everything on your drive with the contents of the image.

Select System Image Recovery from the System Recovery Options dialog box. Windows will examine your hard drive for a backup image to use. If it cannot find one, you will have the option of connecting a backup drive or inserting the final disc of a DVD backup set. You may need to select the location of the backup on your computer. Once Windows finds the image, select the Format And Repartition Disks checkbox and click Next. Respond to the warning prompts, click Finish and Yes. Keep in mind that this process will replace *everything* on your drive with the contents of the previously saved image. Reboot your system.

Windows Memory Diagnostic. Bad, loose, or dirty RAM can cause your system to boot erratically or not at all. Run this set of tests to find out if your system's memory may be causing your problem.

In the System Recovery Options dialog box, select Windows Memory Diagnostic. Your system will reboot and begin checking the status of your RAM. The process can take several minutes. Any errors the system discovers will be noted. It's not terribly difficult to replace memory, so if a bad stick of RAM is what's causing your problem, the solution is pretty straightforward. (For info on how to install RAM, see pages 48 to 50 in the June 2009 issue of *Smart Computing*.)

Command Prompt. You may need to log on as an administrator in order to gain access to the Command Prompt from within Windows' System Recovery Options dialog box. Once there, you can run DOS-based recovery tools. Remember that the command line will allow you to do almost anything, even if it's wrong, so using this part of the utility is not for the faint-of-heart. If you're using a command line-operated recovery tool, be extra careful about following instructions to the letter.

New & Redesigned Tools Aid Recovery

The general consensus on Win7 is that Microsoft got it right this time around. The new OS, while surely imperfect, is nonetheless solid, stable, and usable. Win7's effective and eminently usable system recovery tools are further evidence that Redmond has been listening to its users. As a result, if you get into trouble, Windows system recovery tools are there to help you get out of it. ❚❚

BY ROD SCHER

Build Your Own PC

Building your own PC may sound like a daunting task. However, you don't need any particular expertise or skills to build a great desktop unit. Rather, you need time, patience, determination, and a willingness to be very careful. In this article, we'll discuss why you might want a DIY PC. We'll also detail not only the actual building process but also the prebuild planning, decision-making, and preparation steps.

Yes Or No?

There are many great PCs on the market, and companies such as Dell and HP let you customize their stock PCs online and then build them for you. So why take the time and effort to build your own?

First and foremost, it's a productive way to become familiar with your PC's internal hardware and how it all interconnects. Once you build your own PC, you'll be comfortable changing out hardware that fails or performing upgrades such as adding memory or a bigger hard drive. Users also take the plunge because they want a specialized hardware configuration or blazing fast machine at a lower cost than ordering one off the shelf. (The more expensive a PC would be to purchase, the more you can save by building your own. If you are building a middle-of-the-road system, you will likely pay more for it than if you bought a comparable PC from a retailer.)

If the thought of going "inside the box" terrifies you, a DIY machine may not be for you. There are trade-offs when you take the reins. First, you will lose the factory support that comes from a PC manufacturer. Each component inside the PC will come with its own warranty, but you'll have to troubleshoot on your own. Second, you will need to create your own system recovery CD (which is easy to do in Windows 7; visit tinyurl.com/2c4o4qo for instructions).

Plan Your Project

When you build a DIY PC, only a few things are mandatory inside the box. These are a motherboard (the basic circuit board to which everything else attaches), a CPU (processor) with a means of being cooled, RAM (memory), a power supply and case, a hard drive, a video card (if the motherboard does not have a built-in graphics processor), and an operating system. You'll also need standard peripherals—a monitor, keyboard, and mouse.

An internal optical drive (such as a DVD drive) is not a necessity, but it is an easy means of installing your operating system. Optional niceties include a second internal hard drive and expansion cards to support features such as wireless networking, more USB and FireWire ports, a memory card reader, or a modem. We won't detail add-on cards in this article, beyond a mention of how they relate to expansion slots in the motherboard section. We'll just say that having a wish list and then comparing it against your motherboard's built-in and expansion capabilities is the cornerstone to satisfaction.

Make Purchases

You can buy components from a local computer or electronics store or from an online warehouse. Online offers the most choice; local makes it easier to return components. You don't have to purchase everything separately, either. Online component retailers sell motherboard-processor combos and "barebones" bundles that include a matched motherboard, processor, case, power supply, memory, and sometimes a cooling fan and heatsink (these last two items keep the processor from

overheating). Bundles are often attractively priced and may include rebates.

Purchasing a bundle helps ensure core components are compatible, but again, it limits your choices. In the remainder of this section, we'll detail considerations for each of your "must-have" components, whether you purchase them bundled or not.

Motherboard. Motherboards (also called mobos) come in several form factors (footprints), but form factor isn't an issue provided the mobo fits in your case. Instead, choose a mobo because it's compatible with your processor and offers the right combination of connectors/card slots. A mobo will be promoted as being designed for Intel or AMD, with specific, supported processor classes (such as AMD Phenom X4) listed.

The more expansion slots your mobo has, the more you can upgrade your PC later. However, add too much and you'll need a new power supply, as well. Look for a PCI Express 2.0 x16 (Peripheral Component Interconnect Express 2.0 x16) slot if you want to upgrade to a video card from a manufacturer such as Nvidia (www.nvidia.com) or ATI (www.amd.com).

Optionally, some mobos bring a lot to the table so you don't need add-in cards at the outset. The one we chose for our barebones PC, the Asus M4A785-M (about $89.99; www.asus.com), incorporates surround-sound support, an onboard gigabit Ethernet port, six onboard USB ports, and a highly rated graphics chip with HDMI (High-Definition Multimedia Interface) output. Gigabyte and Asus are two of the top-rated mobos, so we recommend you start your evaluation with them.

Processor. The big deal in processors today is quad-core—four separate processing components. Quad-core processors perform better with operations, such as video processing and computations, that can be broken into multiple threads. However, the speed of the processor—such as 2.4GHz—is also important. For the average user, a 2 to 3GHz processor is fine. If quad-core isn't much more, go for it.

We selected the AMD Phenom X4 9650—a 2.3GHz, quad-core processor with a 4MB cache (a dedicated memory module that reduces memory access times). It's a reasonably fast, well-received quad-core processor. It has been on the market more than a year, so we snagged it for less than $100.

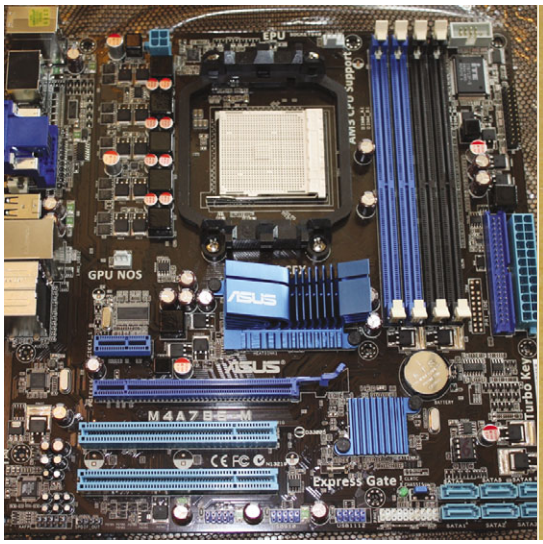
Cooling fan and heatsink. Extremely important to the life of your system is adequate cooling for your processor. A processor may come bundled with a fan/heatsink. If yours doesn't, buy a fan compatible with your processor. Most heatsinks include a thermal compound, which facilitates the fast transfer of heat from your processor to the heatsink during installation.

RAM. Many mobos, including ours, have four memory slots. If you are relying on onboard video, which shares memory with the operating system, adding some extra memory will speed things up. Kingston and Patriot are two big names in system memory. For our system, we chose Ultra memory because it is reliable and comes with a lifetime warranty. Check your motherboard specifications to see how much and what type of RAM it supports.

We filled all four of our slots with 2GB memory modules, giving us 8GB of RAM. Memory is also available in 4GB modules, but one 4GB module is generally more expensive than two 2GB ones. No matter what modules you choose, always add them in pairs.

Case and power supply. Some cases come with a power supply installed, which saves a few steps. The case (provided it matches your mobo) is less important than the power supply. Power supplies are measured in watts. Buy less than you need and you can damage your system; more and you are wasting energy. Our case came with a preinstalled 450-watt power supply, which is fine for our system. Note that Antech (www.antech.com) and Corsair (www.corsair.com) are leading suppliers of cases and/or power supplies, but many companies make good ones.

Hard drive and optical drive. We like capacious drives—for this build, we picked up a Seagate Barracuda 750GB drive for $62. We shied away from a bigger internal drive, because if one



Familiarize yourself with the layout of the motherboard before starting.

Replace the case's built-in I/O shield with the one provided with your motherboard for a perfect fit.

fails, it takes a huge chunk of information with it. However, file junkies can find a 2TB (terabyte; 1,000GB) drive for as little as $150. In addition to Seagate, top names in hard drives are Western Digital and Hitachi. Creating a RAID (redundant array of independent disks; multiple drives to maintain a redundant data store) configuration is beyond the scope of this article, but if you delve into it, you'll have special drive requirements. For the optical drive, look for the desired combination of read-write capabilities. Our HP dvd1260i drive has 24X CD/DVD read/write/rewrite capability and costs $39.99 on sale. Skip the rewrite feature and you'll pay less.

Operating system. For this build, we used the Win7 OS (operating system). Nearly all the online retailers sell OEM (original equipment manufacturer) versions of Win7 at a deep discount compared to the full-priced version. OEM versions of any Windows OS cannot be transferred to another machine—they are hardware dependent. Consequently, we recommend a full version of Win7. To ensure you choose the right edition of Win7 for your needs, visit tinyurl.com/2ed2dso.

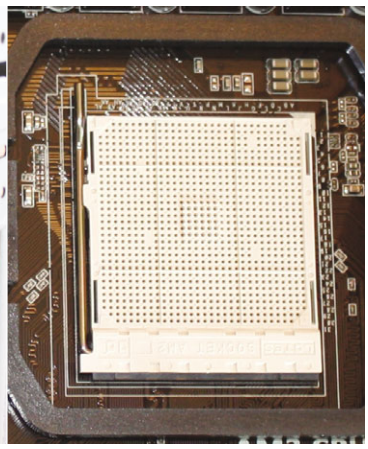
External components. Choosing a monitor, mouse, and keyboard is beyond the scope of this article. For the purposes of testing your new PC, you can probably use the hardware from your existing PC, then buy new hardware if you want it. Monitor selection is highly user-specific. For help choosing a monitor, check out "How To Buy A Monitor" from *First Glimpse*: tinyurl.com/28az49d.

Get Building

Building a PC is exciting and precise, but it's not that complicated. The most important consideration is static reduction, for which you should buy an antistatic wristband or glove (under $10) and use it from the outset. For even more protection, antistatic mats (start under $20) are great.

Once all components are assembled, double-check them for compatibility and place them on a clean, well-lit surface such as a kitchen table. Avoid working on a carpeted floor, which increases static. Remove each item from its casing and place it on top of the antistatic bag in which it rested. Review all available manuals (find missing ones online) and familiarize yourself with the mobo's layout using provided diagrams. Grab a small screwdriver. It helps to have an Internet-connected notebook to track down answers if problems arise, but this is not required. Note that our instructions mount the hard drives first and the mobo last. This allows more working room during installation.

It's easiest to mount drives first to ensure the motherboard and CPU fan don't restrict access to the bays. These drives have already had their power and data cables connected.



The CPU socket may have a specific pattern in the grid that matches up with the pins on the CPU.

Prepare The Case

1. Remove the case from the box and extract the screws holding the cover or sides in place.

2. From the inside, remove any bundled cabling, screws, and hardware. You will see special screws—probably threaded on one end, with a threaded hole on the other. These are "standoff" screws that secure the mobo and elevate it from the case sides. Check the mobo's installation manual and affix standoff screws where needed.

3. If your case does not have a power supply installed, use the instructions that came with the power supply to attach it to the case.

4. Your case and mobo should both have an I/O (input/output) connector shield, which surrounds the ports and connections. Pop off the existing shield and replace it with the one that came with the mobo. If your mobo didn't include a shield, you may have to customize the one provided with the case.

Install The Hard Drive & Optical Drive

1. With your case open, look for gray metal drive "bays" (housing chambers). There should be two sizes—5.25 and 3.5 inches wide. To install your optical drive, pop the cover plate out of a 5.25-inch bay and insert the drive through the front. Secure it with the provided screws.

2. For the hard drive, slide it through the back of the appropriate-sized bay and press gently until it is seated. Secure it with provided screws.

Install The CPU

1. With the mobo resting on its antistatic bag, locate its square CPU socket and the arm (metal or plastic) alongside the socket. Unlock the socket by pushing out and then pulling up the arm.

2. Check the manual for correct CPU alignment and gently position the CPU

in the socket. With our AMD CPU, there were four small squares of plastic in the socket grid that corresponded with identical squares on the CPU.

3. Replace the socket arm, which should move back to position without difficulty. If it doesn't, remove the CPU and try again.

Install The Fan/Heatsink

1. If your CPU did not come with a fan, you may have to mount a bracket to the fan or the CPU socket first. The fan installation guide will tell you how.

2. The fan manual should also indicate if you need to squeeze thermal compound (about half the size of a pea) onto your CPU or heatsink or if the heatsink has a preinstalled thermal pad.

3. Locate the fan's mounting hooks and match them up with the clips or follow the fan manual to lock the heatsink/fan and bracket into place.

4. Insert the fan's power connector into the fan receptacle on the mobo. The mobo manual will show you where this connector is located.

Install The RAM (Memory)

1. Locate the memory slots—long, thin connectors with plastic clips on either side.

2. Press the inside of the clips to push them away from the slots.

3. Each memory slot is divided by a solid bar. Place a memory module so the slit in the bottom of it matches up with the bar.

4. Press gently but firmly until you hear the module click. This should spring the clips closed, as well. Repeat for your other memory modules.

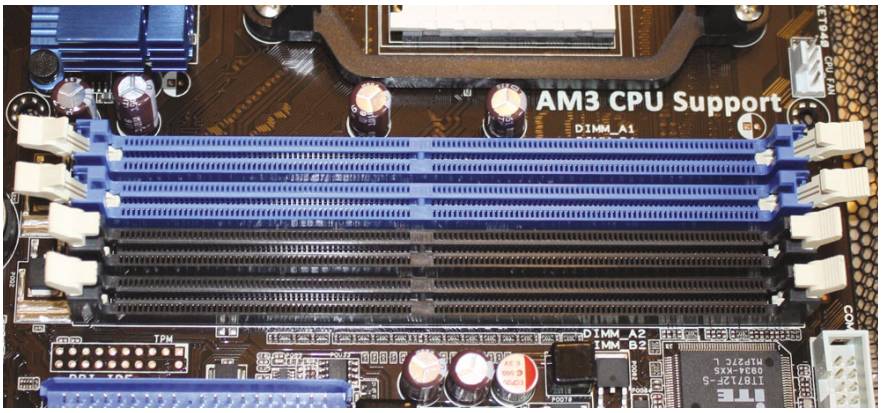
Mount The Motherboard

1. Lower the mobo into the case and line up the I/O connector plate and screw holes. You may have to hold the mobo in place (by the edges) to keep the I/O connection tight while you attach the screws.

2. Using the screws provided by the case manufacturer, screw the mobo down, using washers between the board and the screw if provided.

3. Check the instructions that came with the mobo about installing connectors. There will be many—the hard drive and optical drive connectors (which also need power cables); the power supply connectors; and the front-of-the-case connections for the Power button, speakers, USB ports, and more. Consult your mobo's manual for assistance figuring out what goes where.

4. If you have expansion cards to add to your system, insert them now and ensure they match up with the openings in the I/O shield.



The memory slots are easy to recognize for their large side clips.

First Flight

Once everything is attached and mounted, connect your keyboard, mouse, monitor, and power cable (leave the case cover/sides off). Plug in the PC's external power cable, click the On button on the back of the power supply, and press the PC's Power button. If you have done everything correctly, the system setup screen will appear and you'll be on your way. (This will be a truly awe-inspiring moment.)

If the machine doesn't come on, it might be a loose or incorrect power or data connection, so go over everything. Rarely, the power supply or another component is bad. Troubleshooting is beyond the scope of this article, but www.smartcomputing.com/techsupport has a considerable archive of "dead PC" articles that can help you locate the problem.

You should see the option to run BIOS (Basic Input/Output System) setup. Accept it and ensure the mobo recognizes your optical and hard drives. Ours did and needed no configuring. (With some motherboards, you may have to change your boot order to boot from CD.) Once you are ready to go, insert the Windows CD, exit BIOS setup, reboot if necessary, then let Windows take over. It will offer both Upgrade and Custom (full) install options. Select Custom. Windows will help you format your hard drive, install drivers as necessary, and install Windows.

Relax & Celebrate

While Windows finishes installing, do something to celebrate. When it completes, create a system recovery disc using instructions on the Microsoft site noted previously. Shut down your system, replace the case covers, and boot the system. You can now install drivers for any expansion cards as well as components such as printers and external drives. For months, every time you push that Power button on your DIY PC, the thrill of success will wash over you. ❚❚

BY JENNIFER FARWELL

COMPILED BY NATHAN LAKE

Short & Simple Tips To Make Things Easier

Many of our readers come across fast, easy ways to solve a problem or accomplish a task. Well, we'd like to hear about it! If you have a great tip you'd like to share, email us at readerstips@smartcomputing.com. If we print your tip, we'll send you a free *Smart Computing* T-shirt. You'll be the envy of all (well, some) of your friends.

Please include your first name, last name, and address, so that we can give you credit if we print your tip. (And so that we can send your T-shirt to you, of course.) Please limit your tip to 200 words or fewer. Not all tips received will be printed, and tips may be edited for length and clarity.

Icon Change

If you want to change the appearance of an icon on your Desktop, right-click the icon and choose Properties. Click the Change Icon button (the Change Icon option may not be available for all icons), and you'll see one or a limited number of icons to choose from. To select from a bigger pool, click the Browse button, locate the Windows directory, and open the System32 folder. Many of the DLL and EXE files in the folder contain icons that you can use to replace the icon you want to change. When you select one of the files, you'll be able to see the different icons it offers. The System32 folder will vastly expand your icon options.

Gilbert H., Moorestown, N.J.

Snipping Tool

Windows Vista and Windows 7 include a Snipping Tool program, which has an icon similar to a pair of scissors and a red outlined circle, that can capture screenshots. Click Start and select All Programs, Accessories, and Snipping Tool. To use the program, open the application or content you want to capture and bring up the Snipping Tool. Highlight what you want to capture by dragging a box around the area, and the Snipping Tool will crop out the image. You can save the screenshot as an HTML (Hypertext Markup Language), PNG (Portable Network Graphics), GIF (Graphics Interchange Format), or JPEG (Joint Photographic Experts Group) file.

Gerry C., Wexford, Pa.

Install Software On A Netbook

I recently purchased a netbook, but I had trouble installing software on it because the netbook doesn't have an optical drive. To resolve my problem, I used my desktop PC to copy the files from the software disc to a thumb drive, and I was able to install the application from the files on the flash drive. To copy the content, I opened My Computer, right-clicked my disc drive, and selected Copy. Then, I right-clicked the flash drive and clicked Paste.

Chuck F., Bluffton, S.C.

Fast Cut & Paste

If you have a programmable mouse (one with buttons on the side that you can configure to perform certain functions), you can use the customizable buttons to speed up how you use your computer. For example, using the setup application included with the mouse, I've configured the Forward button on my programmable mouse for the Cut function, and the Back button is the Paste function. So rather than having to go to an Edit menu and select Cut or Paste, I can copy content with two clicks of my thumb.

Ray E., Durham, N.C.

Clean Print Cartridges

Recently, a friend's printer stopped working, so I loaned him an inkjet printer of mine that had been in storage for around three years. But when I tested the inkjet printer, it was not able to print any black ink. I ran the printer's cleaning cycles, as well as the prime cycle, and it still wouldn't print black. I took out the black ink cartridge and saw that the print head was smudged with ink, which was wet to the touch. Figuring I had nothing to lose, I used an alcohol wipe from the medicine cabinet to clean the print head surface. After reinstalling the cartridge, the printer generated a test page with all the colors.

Bruce P., Ridgefield, Conn.

by Seth Colaner
seth@smartcomputing.com

Bing-Bang-Boom

Apple's Busy Spring

Since we last checked in, much has transpired in the Apple world: The iPad finally launched, the iPhone OS got a huge makeover with version 4.0, and a new line of MacBook Pros was introduced. Whew! Steve J. and company have been busy. Let's break all this down.

The iPad

Unless you've been away from every radio, television, computer, newspaper, magazine (including this one), and human being for the last few months, you've heard plenty about the iPad. Some people hail the device as the Dawn Of A New Computing Epoch, some think it's only worth the energy it takes to smash it with a golf club, and everybody else falls somewhere in the middle.

Wherever you are on the iPad love-or-hate continuum, it's indisputable that its release was a big deal. Apple estimates that it unloaded 300,000 iPads alone on its first day, and 450,000 after five. In other words, the iPad is here to stay.

Extreme Makeover, iPhone Edition

Tangential to and for some reason far less hyped than the iPad was Apple's recent release of version 4.0 of the iPhone OS. In and of itself, iPhone OS 4.0 delivers functionality to the iPhone and iPod touch that users have been clamoring for since they first came out, and plenty more. But the upgrade is even more noteworthy because it affects the iPad, as well.

Probably the most exciting feature in the update is the ability to multitask. In all previous iterations of the iPhone OS, you had to close one application in order to use another—kind of arduous if you were checking your email and wanted to open a link in Safari, for example. The only exception to the rule was if you were playing your iTunes music, for some reason. Now, you can have multiple programs open at once.

Other smart new features include the ability to organize apps into folders; a unified inbox where all of your email accounts will route messages; the iPad's iBooks app, shrunken down for the iPhone and iPod touch; and an Apple-built social gaming network called Game Center, which will reportedly be similar to existing social gaming networks.

Less compelling for the average user but no less noteworthy, the iPhone OS 4.0 update will include capabilities for the enterprise user, such as data encryption, the ability for IT staff to manage apps wirelessly, and support for Exchange Server 2010, as well as a new mobile advertising platform called iAd. iAd will allow developers to make mobile ads with rich, entertaining media content that you and I will supposedly interact with.

All told, there are more than 100 new updates to the iPhone OS in version 4.0. Make no mistake—this is a big deal. If you're an iPhone or iPod touch user, you'll get the update this summer (with the exclusion of first-generation iPhones); iPad owners will get it in the fall.

MacBook Pro Refresh

Last and—well, least, the MacBook Pro line just got a refresh. New MacBook Pros come in 13-, 15-, and 17-inch models, all with an aluminum unibody. Although the 13-inch model still only has an Intel Core 2 Duo (2.4GHz or 2.66GHz) processor, the rest of the line sports tasty quad-core Intel Core i5 and Core i7 chips, clocked at 2.4GHz, 2.53GHz, or 2.66GHz. The Core i5 and Core i7 processors also feature Intel's Hyper-Threading and Turbo Boost technologies, which maximize the efficiency and power of the processors.

All the models now come standard with a burly 4GB of RAM. You have a variety of options for a hard drive, though. You can stick with the standard 250GB, 320GB, or 500GB 5,400rpm SATA (Serial Advanced Technology Attachment) hard drives; bump up to a 7,200rpm version (except on the 13-inch model); or opt for a fast 128GB, 256GB, or 512GB SSD (solid-state drive).

Image courtesy of Apple

Apple recently unveiled its new line of MacBook Pros.

The graphics situation is an interesting one; the 15-inch and 17-inch MacBook Pros have built-in Intel HD graphics as well as a discrete Nvidia GeForce GT 330M graphics processor with 512MB of dedicated video memory, and Apple developed technology that seamlessly switches between the two depending on the workload. (The 13-inch Pro lacks the Nvidia GeForce GT 330M graphics processor.)

Finally, battery life is a major selling point of the new line; the 13-inch MacBook Pro will supposedly last for up to 10 hours at a stretch, while the 15- and 17-inch models are listed at eight to nine hours. Prices for the new line start at $1,199 (13-inch), $1,799 (15-inch), and $2,299 (17-inch).

Mac Corner
Share Your Digital Media With iDVD

iDVD is one dimension of Apple's iLife, a media applications suite that also includes iPhoto, iMovie, GarageBand (see page 43 of the May 2010 issue), and iWeb. It's optimized to help anyone create a personalized slideshow to burn to a DVD or quickly transfer media from a video camera to a DVD. iDVD includes several options that will help you make attractive slideshows, such as a large selection of creative slideshow themes (available in standard or widescreen format); the option to add movies; and the ability to customize chapters, buttons, and extras.

The iDVD Home menu opens with four project options: Create A New Project, Open An Existing Project, Magic iDVD, and OneStep DVD. Each of these categories is designed to streamline your slideshow- and movie-making experience. For instance, Magic iDVD walks you through three steps—Choose A Theme, Drop Movies Here, and Drop Photos Here—in order to simplify the process of adding and organizing media for a project or burnable DVD. OneStep DVD lets you efficiently burn an autoplay DVD using the uploaded video from your docked camcorder. Customization options give you the reins to edit a photo or video slide at every stage of development. We'll walk through the main iDVD features so you can learn how to design a slideshow, add personal touches, and burn media to a DVD to share with friends and family.

Magic iDVD

What's "magical" about Magic iDVD is that it simplifies a project by breaking it into steps that are visual and easy to complete. When you select Magic iDVD in the Home menu, iDVD asks you to title your DVD. Next, you will choose a DVD theme. Above the theme selections is a drop-down menu that includes the theme categories available in iDVD; if you want to view every theme, click All. There is enough variety in the theme selection that you can personalize your slideshow according to the type of trip you took, event you attended, or photo portfolio you want to distribute.

In the Drop Movies Here area, you can add video clips (already saved on your hard drive) to your slideshow. Click the Movies button in the media pane on the right side of the Magic iDVD window to see available video files. Drag and drop the desired clips to the Drop Movies Here section. You can also drag and drop music tracks and photos from the media pane. Click the Photos button and select a photo or album of photos you would like to make into a slideshow. Each pane under Drop Photos Here represents a single slideshow. A simple way to transfer photos to the slideshow panes is to click an album or event and select all (Command-A) and then drag them to an empty pane. To pair songs with your slides, first select the Audio button in the media section. Then,

From the iDVD Home menu, you can Create A New Project, Open An Existing Project, start Magic iDVD, or make a OneStep DVD.

iDVD includes a large number of professional-looking slideshow themes. The Shelves theme features white menu frames that add a fresh look to your slideshow.

drag and drop songs on the same panes to which you've added photos.

When you've completed these steps, you can choose to either preview the entire slideshow or create the final project. The Preview button—the Play button in the bottom-left corner of Magic iDVD—will play your project as a trailer, so you can view slide transitions and menus. If you click the Create Project button, Magic iDVD transfers your slideshow to a new editing screen where you can access the DVD slide map (similar to mapping out a family tree) and edit slides.

The slide map displays one or more slides viewable on the Slideshow Main, Chapters, and Extras menus. You'll see a flowchart of each menu—this is where any warnings will appear to let you know if some slides are missing media. If there's an inconsistency in your slideshow, iDVD will display a yellow or red warning symbol: Hover your mouse pointer over the warning symbol to reveal an explanation of the problem. For instance, you may have unintentionally left a movie clip slide blank. The remedy is to drag the movie to the slide. The warnings should disappear, and you should see a thumbnail of the movie in the slide.

It's a wise idea to preview the final product before you burn your slideshow, so you can make sure you've labeled each menu correctly, timed your slideshow appropriately, and matched the right songs to each chapter or slide. Next, insert a blank DVD into your Mac's DVD drive. Click the Burn icon, which resembles a gray pie chart, to start the burning process. We burned our Magic iDVD slideshow, which featured 60 slides and two songs, to an 8X DVD+R (recordable) disc. The total burn time was approximately 20 minutes, which allowed for iDVD to prepare and process the menus, process the slideshows, and finalize the burn. If you chose to add movies to your slideshow, expect some extra processing time.

Customize Slideshows

The personalization features on iDVD will help you create a slideshow that reflects your visual preferences and overall style. To customize an existing project, double-click a slideshow pane in the map view, which will open the entire slideshow in the editing window. To increase or decrease the time delay between slides, click the Slide Duration drop-down menu to choose from 1, 3, 5, or 10 seconds. Or select Fit To Audio to sync the timing of the slide transitions with your audio tracks. There are plenty of slide transitions such as Dissolve, Droplet, Fade Through Black, Flip, Push, Reveal, and Wipe. Click the drop-down menu next to Transition to see all of them. If you've incorporated music into your slideshow, you can use the Slideshow Volume slider to adjust the volume.

In addition to these preferences, the Settings menu includes options to adjust the slideshow repetition, view slide data, and mute audio settings. Select Loop Slideshow if you would like your show to play continuously. Show Titles And Comments displays the photo title and inserted comments at the bottom of the slide. You can easily edit these by selecting the title and comment fields under each slide in the editing pane. Each title and comment will appear in the slideshow exactly as you've typed it. In order to add a copy of the original image file to the DVD you're burning, be sure to select Add Image Files To DVD-ROM prior to completing your slideshow project. None of the aforementioned settings are default except for Duck Audio While Playing Movies. This ensures that the slideshow and movie audio do not play at the same time.

OneStep DVD

OneStep DVD lets you immediately burn your video camera footage from a DV camera to a DVD. To start this process, plug your video camera into your MacBook using a FireWire cable connection. Insert the tape before you connect the camera and set your camcorder to VTR, VCR, or Play mode. Open the iDVD program next and click OneStep DVD. After this, insert a blank DVD into the SuperDrive (the optical drive); iDVD will capture and burn your footage from your camcorder to the DVD.

BY JOANNA SAFFORD

Compiled by Blaine Flamig
Illustrated by Lori Garris

Find It Online
Three Chords & The Truth

About.com Guitar
guitar.about.com

For beginning guitarists, the journey to becoming an accomplished player can be a simultaneously mind-opening and frustrating one that requires plenty of practice learning the parts of the guitar; chords, scales, and chord progressions; related equipment; and more. Helping make sense of it all is About.com's exceedingly comprehensive Guitar Guide. Aimed primarily at newcomers, the site offers easy-to-follow lessons; a basic chord library; entry-level songs; tips on buying and maintaining gear; and guides on changing strings, tuning, and more.

Justinguitar.com
www.justinguitar.com

Online since 2003, Justinguitar.com comes from Justin Sandercoe, a London-based pro guitarist who has become somewhat of a celebrity in online guitar circles due to the free video lessons he's been posting at YouTube since 2006, amassing more than 60 million views. His JustinSandercoe Channel at YouTube, meanwhile, has roughly 96,000 subscribers. Praised by legendary Queen guitarist Brian May for the site's wealth of quality, free lessons, JustinGuitar.com is essential viewing for beginning to intermediate players across numerous styles.

GuitarMasterClass
www.guitarmasterclass.net

Navigating GuitarMasterClass, which Sweden native Kristofer Dahl founded in 2006, takes some doing simply because there's so much guitar goodness to dive into, including an excellent knowledgebase of 1,000-plus articles. You'll also find more than 2,000 lessons for scads of popular styles from dozens of instructors, although gaining complete access to lessons and the site's personal mentoring program requires a subscription. Nonsubscribers still have access to portions of video lessons, a Lick Of The Day, and an active community forum.

That's NEWS To You

Finding the appropriate online group to match your interests can be a monumental task. So each month, we scour the Internet to bring you the friendliest forums and most interesting bloggers the Web has to offer. This month, we focus on those blogging about guitars.

A Guitar Teacher's Lesson Notebook
www.heartwoodguitar.com/WordPressBlog

If you're five and up, live in the Seattle area, and want to learn guitar, Stanford-educated instructor Rob Hampton is certainly qualified to teach you. He's just not available; the waiting list to take lessons via his Heartwood Guitar business is "so long I'll probably never get to the end of it." By all means, though, bookmark his endearing A Guitar Teacher's Lesson Notebook blog straight away.

After creating the Heartwood Guitar Web site in 2003, Hampton realized "if I could get to No. 1 in Google for the search term 'Seattle guitar lessons,' I'd never have to worry about keeping my schedule full." One way to optimize the site for search engines "was to keep a lively blog that would attract links from other people's Web sites," Hampton says. "I thought to myself, 'Well, even if it doesn't help my search engine rankings, it'll be fun.' I enjoy writing, so keeping a blog sounded like a nice way to round out a day of teaching."

Hampton's posts charmingly deal primarily with his students, teaching philosophies, and the "Rob's Totally Awesome Guitar Teaching Handbook" he recently authored. The blog also grants access to chord charts that Hampton created to play along with 450 songs, as well as video clips of his students performing. "For the first few years, the blog was a great way to let potential clients learn more about me," Hampton says. "Now that I don't need to advertise my lessons any more . . . it gives me a chance to teach a broader group of people and to show off my students to the world." Last year, a video of Hampton's 5-year-old student named Wesley performing Johnny Cash's "Folsom Prison Blues" went viral and "the blog became a forum for visitors to discuss issues around children, fame, and the media."

A former high school teacher, Hampton has taught guitar to students of all ages, including a 75-year-old blind student and a "handful of 3-year-olds who could barely balance a guitar on their lap." Hampton says, "Any student who's having fun is a good student in my book. Some eat and sleep with their guitars; some never practice. But if they're experiencing the joy of music, that's all that matters."

UltimateGuitar.com

www.ultimate-guitar.com

UltimateGuitar's massive database of guitar tabs makes this site extremely popular among guitarists of all skill levels. For the uninitiated, tabs, or guitar tablatures, give guitarists a method for learning songs that doesn't require reading music. Despite launching in 1998 with only a "handful" of tabs from 10 artists, UltimateGuitar now boasts more than 300,000 tabs. Conveniently, an available iPhone/iPod touch app makes viewing them away from a PC incredibly easy. UltimateGuitar, which touts 1 million-plus registered members, also has lessons, reviews, interviews, and columns on tap.

Vintage & Rare Guitars

www.vintageandrareguitars.com

As with many gearheads, a good amount of guitar players are renowned for their knowledge concerning vintage equipment, including guitars, amps, pedals, pickups, and more. Though we've yet to visit in person, Vintage & Rare Guitars, which has stores in London and Bath, is a favorite online destination for the scads of drool-worthy vintage Gretsch, Fender, Gibson, Rickenbacker, Martin, PRS, and other six-string beauties it has on display. If you don't believe us, just check out the giddy looks on the famous faces who have visited the stores in the site's Celebrity Customers gallery.

ChordGuide.com

chordguide.com/guitar

Armed with even three chords, you have enough ammunition to play hundreds of songs and write your own. Dozens of Web sites have chord libraries and instructions on forming chords but bury the information among their other offerings. ChordGuide.com's refreshing no-frills approach, however, emphasizes nothing but chords. Just click a root note, say C, on the home page, and chords based on C display. You can also find variations of chords and save chords to a My Sheet page you can use to print chord lists. Registered members can create multiple sheets that are accessible from Internet-connected computers.

Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available to download. Each month, we feature highlights from our pickings. This month, we delve into helpful fretboard training software.

Absolute Fretboard Trainer 2.50 Lite

www.absolutefretboard.com

Among the helpful, free tools you'll find at the Shred Academy (www.shredacademy.com), a Web site devoted to serious-minded guitarists seeking to acquire serious chops, is Absolute Fretboard Trainer Lite 2.50, software aimed at helping you learn the guitar's fretboard in intricate depth, thus greatly expanding your musical horizons. Upon downloading and installing the software, you learn its creator had 25 years of experience as a musician and 15 years as a computer programmer when developing the software—a fact that should comfort potential users and one that's visible in the software's impressive toolset and capabilities.

Above all else, the program's intended purpose is to help users "learn the fretboard of the guitar or bass until you know each and every position immediately and effortlessly just like you know the open strings." That's assuming you know the open strings. If you don't have that basic information, you're in for a fairly sizable learning curve. Additionally, if your only aim with the guitar is to learn a few chords for casual playing, the creator warns "you don't really need to learn the fretboard, and I'll be the first to tell you not to bother with this program."

For those with higher guitar aspirations, Absolute Fretboard is a treasure chest of not only interactive tools that help you learn the notes on the fretboard, but of various information that passes along a fair amount of music theory through drills, practice routines, informative explanations, and more. For example, Absolute Fretboard can not only help you learn and play the chromatic scale, but also learn how it can help in your improvising, songwriting, and soloing.

Although the program's layout is overwhelming upon first sight, a Control Bar section makes great sense out of the app's buttons, drop-down menus, sliders, and other commands, including a metronome, tuner, progress map, Q&A timer, choosing between sharp and flat names, and configuring shortcut keys. The program's free version does block access to roughly 10 advanced lessons offered in the full version ($79.95), as well as limits drills to the key of C major.

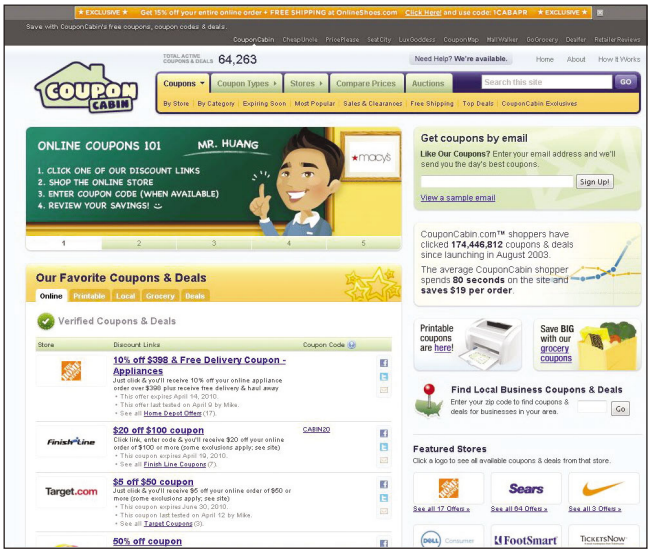
Web Tips
Enhance Your Time Online

Get Discounts Online

Problem: Many online retailers have a coupon code box, but I never have a code to enter. Where do I get codes so I can save money when purchasing items?
Solution: Shopping online already saves time and gas, but wouldn't it be nice to also get free shipping or 20% off your order? CouponCabin.com is a database of coupon codes that you can use while shopping at various retail stores online. Before finalizing your next online purchase, browse to this site to find valuable coupon codes. Simply search for your preferred store by using the Search field at the top of the main page. You can also receive coupons via email by entering your email address in the Get Coupons By Email box and then clicking Sign Up.

Find A Great Book

Problem: I love to read, but it can be difficult to choose a book from the large selection at my local library or bookstore. How can I find books I'm sure to enjoy?
Solution: Unless you already have a detailed reading list, choosing which book to open next can be a challenge. What Should I Read Next (www.whatshouldireadnext.com) is a useful Web site that can help you find your next page-turner based on the last book you read. Simply enter the title, author, or ISBN (International Standard Book Number; the number found above a book's bar code) and click Enter. Choose your book from the first list of search results and then browse the second list to find other books of interest. Clicking a flag to the right of each entry will take you to Amazon.com to learn more about or purchase a book.



CouponCabin helps you track down coupon codes that you can use to save on online purchases.

Get The Best Deal

Problem: When shopping online, how can I be sure I'm getting the best price for a product without searching dozens of Web sites?
Solution: If you're looking for an easy way to compare the price of a product among multiple retailers, point your browser to PriceGrabber.com. On the main page, type the name of a product type, such as digital camera, into the Search For field, or search using the category tabs on the left side of the page. You can also type in a specific product, such as a certain make and model of digital camera. Select your product from the list of search results and then compare prices among popular stores. If none of the prices matches your budget, you can become a member and set a price alert that will notify you when the product's price has dropped.

Travel Wisely

Problem: I am traveling overseas and have a hard time converting U.S. dollars to my destination's currency. How can I keep an accurate count of my money?
Solution: It can be tough to determine how much money you have while traveling, especially when the conversion rate is different for each country you visit. Oanda.com is an online currency converter that offers accurate, up-to-date rates and an easy-to-use interface. Simply click Currency Converter at the top of the page, indicate what type of currency you currently have (such as 20 U.S. dollars), and then select the type of currency you want (such as euros). Your conversion amount instantly appears in the Results field.

Live A Healthy Life

Problem: I want to be healthy and fit for my age, but I don't know where to start.
Solution: Knowing how to be healthy can sometimes be more difficult than simply saying you'll eat right and exercise. If you're looking for personal ways to help you achieve your health goals, navigate to RealAge (www.realage.com). Here you can take the RealAge Test, which uses a series of questions about your health and habits to determine your real age, which could be younger, older, or the same as your calendar age. From the results, RealAge will create a health plan tailored to your needs. You can also browse articles, tips, and more by using the tabs on the main page.

BY KRIS GLASER BRAMBILA

How Search Engines Work

The Mechanics Behind Your Search Results

When you're looking for something new on the Internet, a search engine is typically your first stop. We all know how to use a search engine: Just type a word, a phrase, or the name of a person or place and then click the Search button to see hundreds of thousands of links to relevant Web pages. But there's a lot that goes on behind the scenes to make sure the Google bots, Bing machines, and Yahoo! droids put what you're looking for at the top of the results page. Search engines make it their business to read your mind, and you might be surprised by some of their methods.

The Specifics Of Search

Search engines, such as Bing and Google, are composed of multiple parts. The aspect you interact with to type in your queries and navigate results is little more than a front-end user interface; much like your Desktop is for your PC's operating system. Behind that user interface, **Web crawlers**, or single-purpose applications that fetch data from the Web, compile a database of documents by requesting specific pages from Web servers all over the Internet, scanning each page for hyperlinks, and then categorizing the results using a numbering system. Speed is a high priority for search engines, so Web crawlers tend to start by indexing the most popular Web pages first, scouring the most active servers and following every link on those pages. The Web search indexes behind search engines, such as Bing and Google, use a variety of **encoding** (converting data from one form into another) and **hashing** (converting words and characters into an abbreviated alphanumeric value) techniques to translate all the words and links returned by Web crawlers into an efficient and fast database that is capable of returning a page of hits in fractions of a second.

Web crawlers are capable of producing incredible volumes of data in a very short period. According to our Google industry source, "A lot of Web sites, we can index in a second or less." But this collection of incomprehensible gobbledygook isn't searchable until it's paired with an index, which singles out words so that when you perform your search, any page that contains words that match your query has the possibility of showing up in your results list. But your Web search doesn't stop there.

The Secret Search Sauce

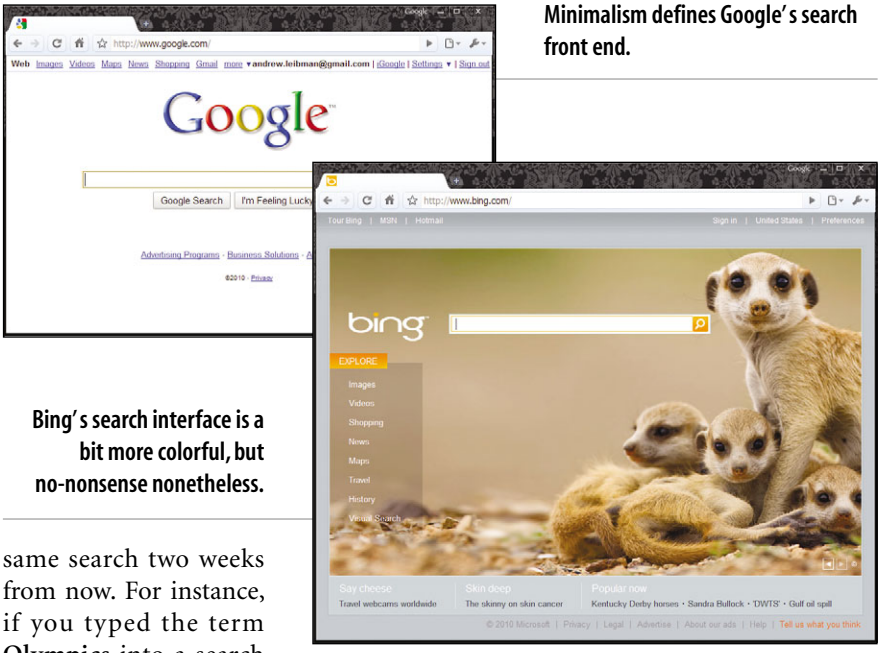
Every search engine has its own bag of tricks for ranking search results and displaying them in order of relevance. The specifics of these ranking techniques are closely guarded trade secrets, and to give you an idea how important ranking is, Google tells us that there are more engineers working on search than on any other product at Google, adding, "Relevancy is really the core job of many, many engineers here." But it's not all I-could-tell-you-but-I'd-have-to-kill-you kind of stuff. Google's PageRank is a fairly well-known relevancy algorithm which helps rank pages based on how

many links there are to a Web page from other pages and the linking Web site's quality (based on things such as the site's reliability and the amount of time the site has been on the Web). In this way, PageRank looks at the Web like it's a popularity contest, and when a popular site mentions another site, it carries a lot of weight with the PageRank algorithm. It's all about the Web sites you know.

Another type of algorithm takes note of where in the Web page a given word is found. Most algorithms weigh any words found in the title, subtitles, metatags (typically the Web designer or Web page owner's details about the contents of the page), and other descriptive locations more heavily. Sometimes an algorithm purposefully omits words from an index, such as "a," "an," and "the." Capitalization and font size are other common factors that can affect how much weight a word might get in an index. These algorithms are the hearts and souls of a search engine, and the better they are at determining what can be found on a given Web page, the better a user's search results will be. But showing a simple collection of links is not all a modern search engine is capable of doing.

Making The Most Of Your Results

While Microsoft, Yahoo!, and Google are not willing to reveal the nuts and bolts of their ranking techniques, Google was a lot more forthcoming about how it arrives at some of the more transparent results you encounter. For instance, when you type **weather** into your search engine-of-choice and press ENTER, you'll typically see the weather for your area. At Google, they call this a Universal Search Result. Context plays a large role in the results of your search. For instance, where you are, what the date is, what is going on around the world, and what is going on in your neck of the woods all affect your results. In this way, a search you perform today will likely return different results than if you make the same search two weeks from now. For instance, if you typed the term **Olympics** into a search engine in early February, you were likely to get Vancouver hotel booking information and broadcast schedules for the recent Winter Games. The same search today returns links for obtaining tickets to the 2012 Olympics in London and the results of the 2010 Games in Vancouver. And search providers are constantly refining their relevancy formula and evolving the search engine to help you find exactly what you're looking for.



Minimalism defines Google's search front end.

Bing's search interface is a bit more colorful, but no-nonsense nonetheless.

Search is an evolving organism. A senior software engineer who works on Web search quality at Google tells us that "at any given time, we're running between 50 and 200 search experiments, meaning that we're trying out a tweak to the ranking algorithm or to the appearance of the results, and we're testing the data to see if users are clicking in ways that suggest to us that it is an improvement." In essence, there are between 50 and 200 versions of Google Search at any given moment; some differ in only minor ways, such as displaying a keyword in bold, indenting a line of text, or changing the ranking of a certain category of queries. Other changes are more dramatic, such as changing the index so that the search engine can return results for queries typed as full sentences. In 2009 alone, Google launched 550 different improvements to its search engine.

Search Seers

Google acknowledges that some searches are easier than others. For instance, if you search for **Survivor** a few minutes after the television broadcast ends, you should be able to find out who got kicked off the island in short order. The searches that are more difficult to produce relevant results on, the ones that keep Google's engineers up late at night, are the completely unique ones. According to Google, the firm's search engine gets more than one billion searches every day. Of those searches, 20% of them haven't been searched for in the previous 90 days. To a search engine, that's the equivalent of an alien language. And trying to anticipate those sorts of queries is the equivalent of trying to learn to speak that language before you've heard syllable one. "That introduces some interesting challenges, because if you don't know what people are going to be searching for tomorrow, you have to kinda guess. It's something we spend a lot of time trying to figure out." ❚❚

BY ANDREW LEIBMAN

Reclaim Your Inbox

Win The War Against Spam

Remember back in the 1990s, when email spam became the bane of your computing existence? You probably figured, like most of us, that in a decade or so, spam would be a thing of the past. If we can put a man on the moon, we should be able to keep junk out of our email inboxes, right?

Well, it's 2010, and things haven't quite worked out that way. Instead of licking spam once and for all, the unwanted messages and solicitations have become more frequent, and in many cases, more dangerous.

Myths & Realities Of Spam

Everyone defines email spam slightly differently, which can lead to some misconceptions about what it is and what it does. Generally though, spam can be broadly defined as any unwanted bulk email.

Not all spam is illegal. Many businesses use email marketing as a primary business tool, and there's nothing illegal about that, as long as they comply with the criteria set forth in the CAN-SPAM Act of 2003 (tinyurl.com/6ldb88). (In brief, the CAN-SPAM Act spells out what is illegal spam vs. what is legitimate mass email marketing.)

That said, international laws vary, and many spammers launch their messages from outside the United States, so in many cases U.S. law doesn't apply anyway. Furthermore, most spammers don't really care much about illegality, and they're notoriously hard to locate and prosecute, so whether a spam message is illegal is almost a moot point anyway.

It's important to realize that there are different types of spam; there's a big difference between junk email, which is usually something you (knowingly or not) signed up to receive, and the serious stuff that professional spammers send you in order to either verify your email address so they can sell it to someone else or deliver a Trojan horse or other malware.

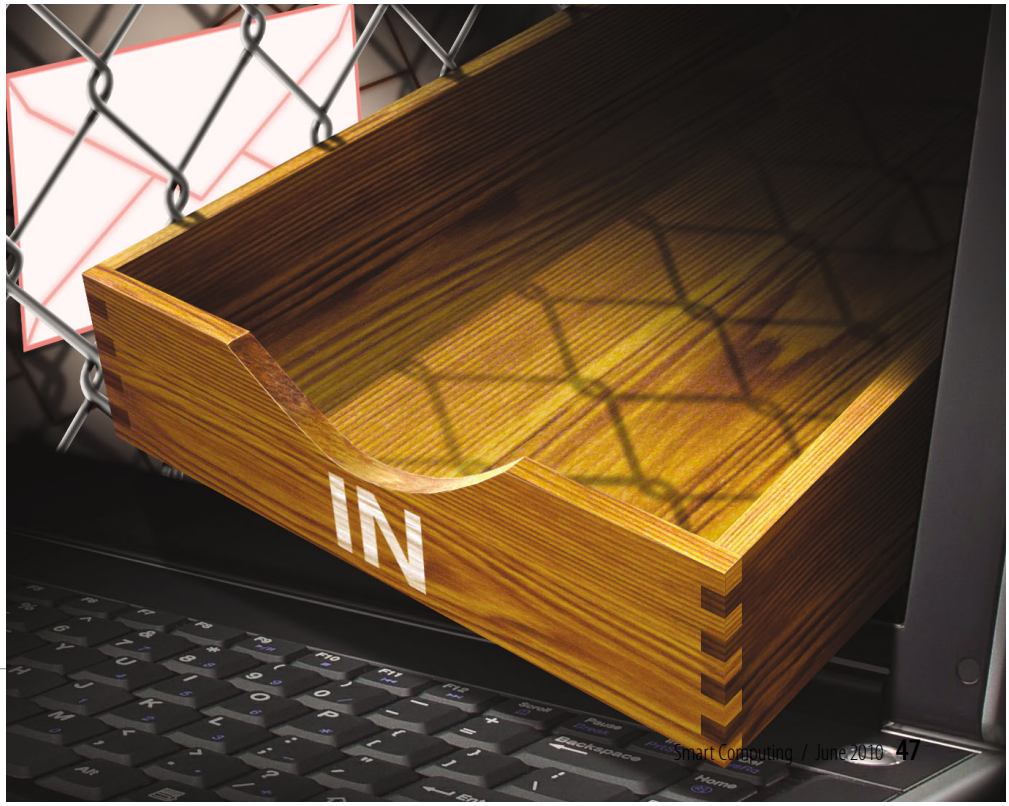
The former may simply be a newsletter or update from an online service you signed up for or an email list for your favorite clothing store. Think of these as the junk you get in your regular mail—catalogs, brochures, and the like. You may not want them, but they're not malicious, and you can always just unsubscribe from the mailing list to stop them. However, the latter is the really nasty stuff; the messages you should never open.

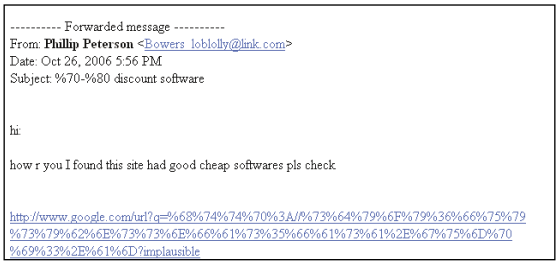
For as much spam as we all receive on a daily basis, you would think that nobody is blocking anything. However, ISPs (Internet service providers) have spent and continue to spend incredible amounts of time, energy, and money working to combat spam. Frankly, they've been pretty successful when you consider that it's estimated that up to 95% of all email is spam. That means that unless only five out of every 100 emails you receive is legit, the service providers are doing their jobs.

Even so, we still see far too much spam cluttering our inboxes, and although the spam assault is far from abating, there are many ways you can combat it.

A Few Simple Precautions

According to Michael O'Reirdan, chairman of MAAWG (Messaging Anti-Abuse Working Group; www.maawg.org), "Common sense is the No. 1 strategy [for combating spam]." He suggests that if you get an email that you think is spam, you should not even open it. Instead,





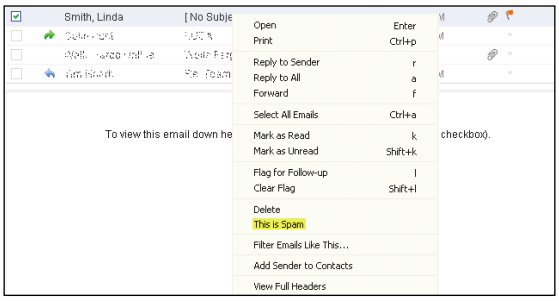
---------- Forwarded message ----------
From: **Phillip Peterson** <Bowers_loblolly@link.com>
Date: Oct 26, 2006 5:56 PM
Subject: %70-%80 discount software

hi

how r you I found this site had good cheap softwares pls check

http://www.google.com/url?q=%68%74%74%70%3A//%73%64%79%6F%79%36%66%75%79%73%79%62%6E%73%73%6E%66%61%73%35%66%61%73%61%2E%67%75%6D%70%69%33%2E%61%6D?implausible

Often, spam is easy to recognize, especially when it's from an unfamiliar email address, has lots of misspelled words, has text that doesn't make sense, and contains a link to a Web site.



Whenever you get a spam email, use your email program to mark it as spam.

delete it, or even better, report it as spam.

Simply opening a spam message can alert the sender that your email address is valid. O'Reirdan continues, "Opening the spam itself depends on whether it then returns back a return receipt. Were you ever to open it up in Web mail, then there's a chance that you could actually let someone know that you've opened that spam." Not every spammer does this, but it's easy enough to set up a read receipt or embed a Web beacon that lets them know that you opened the email. Once they know your email address is active, they'll sell your address to other spammers, ensuring that you'll receive even more spam.

Another way spammers can validate your email address is if you try to unsubscribe from the email list or if you download any images. Some email programs will automatically block images embedded in emails; if you want to see the images, you have to right-click within the email and download them. While that extra step may be annoying on occasion, it's very valuable regarding spam—downloading those images is a dead giveaway that your email address is valid.

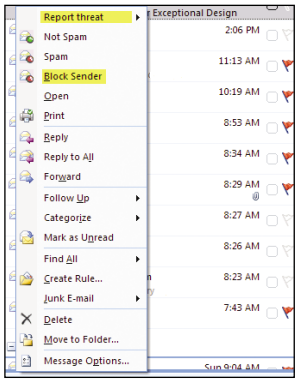
Under no circumstances should you ever open an attachment or click a link in an email that looks suspicious. Even if the sender is someone you know, his or her computer may have been compromised and is being controlled by a bot. For example, it's one thing if your buddy sends you a few photos from the Fourth of July party you both went to, but your suspicions should be aroused if he sends you a request to send him money because he's trapped in London and lost his wallet. (Hint: The latter is all but guaranteed to be a spammer employing a phishing tactic. It would be kind of you to alert your friend that his email address has probably been compromised.)

When you do receive an email you believe to be spam, flag it as spam or junk. This action should keep it and any other messages from that sender out of your inbox. Additionally, report the email as spam. It may not help block that particular spammer right away, but, O'Reirdan says, "Although people don't really see an immediate result from [reporting spam], ISPs have systems which, to some extent, are augmented by users—intelligent users using their brains. [They're] becoming additional scanners basically, and saying 'This is a piece of spam.'" In other words, your contribution may be miniscule in and of itself, but if everyone takes an extra moment to report spam, it helps ISPs block those unwanted messages in the long run.

In the short term, the easiest thing to do to avoid a particular spammer is to block the address. This is called a blacklist or blocked list, and it will block that address permanently. It's easy to add a sender to such a list; often, you can right-click the message and choose the appropriate action from the pop-up menu. It may be as simple as Block Sender, or you may need to create a rule for that email address.

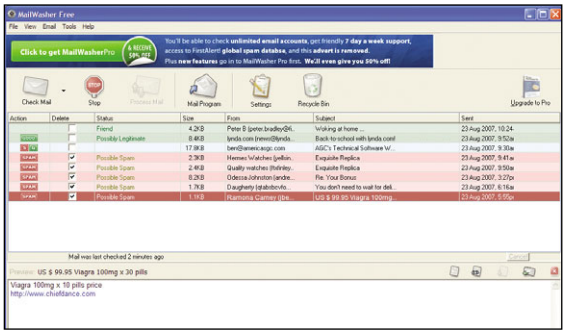
You can also report the spammer to the Federal Trade Commission; just forward the message to spam@uce.gov, being sure to include the full header. You don't need to add a note to the email; just send it along. While you're at it, to report abuse of any kind, you can contact your ISP or email provider directly. Usually the email address is something such as abuse@[serviceprovidername].com.

Of course, sometimes we make it a little too easy for spammers to find our email addresses. We post them all over the Internet on social networking sites, blogs, mailing lists, directories, and elsewhere. If it's out there, the spammers will find it. You can solve this problem in large part by not posting your email address anywhere and opting out of those directories and lists.



Most email services let you easily add a particular sender to a blocked list and report the spammer.

Some people try to be clever and spell out their email address instead of displaying it whole. For example, if an email address is myemail@domainname.com, you might display it as "myemail [at] domainname [dot] com"; however, this is only marginally



Spam filters such as MailWasher (www.mailwasher.net) provide additional protection against spam.

The Federal Trade Commission (www.ftc.gov) has educational resources for those looking to cut down on spam.

effective, as good spammers can still recognize that text as an email address and piece it back together.

Another way to keep spam out of your inbox and stay safe online is to use a "public" email address as well as a private one. The private address is the one that you would use for communicating with family and friends as well as for secure transactions such as bank statements and ecommerce. Use the public address for less important communication, such as receiving email updates from a mailing list. This way, your private email address is far less prone to be spammed or compromised.

No More Games: Going Nuclear

Defending yourself from spam by taking common sense precautions is smart, and being proactive about reporting abuses is important. However, you can take the fight against spam to the next level with software tools.

One method is to use spam filtering software such as MailWasher (www.mailwasher.net). MailWasher offers a variety of helpful features, including letting you preview emails, sender addresses, and attachments before they are downloaded to your computer and the ability to "teach" the program which emails are unwanted. The standard program is free, and the Pro version is $39.95.

Other similar tools include BullGuard Spamfilter (free; www.bullguard.com), which bases some of its filtering on collective user reporting, and Spamihilator (free; www.spamihilator.com). Some spam blockers, such as ApproveMail ($4.95 per month or $44.95 per year; www.approvemail.com), require human interaction on the sender's part to verify that they aren't a bot.

You're Not Alone

Whenever you get frustrated about spam, remember that you're not the only one who wants to fight back. Everyone from you and your neighbor to email providers and ISPs to the federal government is gunning for spammers; even tech companies who are competitors or bitter rivals routinely work *together* on ways to combat spam and malware.

Sites such as Spamhaus (www.spamhaus.org) track and report on spammers and aid law enforcement in nabbing the ne'er-do-wells. The government provides educational resources to help you protect yourself from spam (tinyurl.com/24243b6), and, of course, the judicial branch prosecutes criminal spam cases. Other educational resources are available from groups such as MAAWG (www.maawg.org) and even Microsoft (tinyurl.com/ybbwnzw).

So don't despair if you feel crushed by spam—there are a number of avenues available to help go after spammers and myriad ways you can ward off the salty onslaught of spam. ❚❚

BY SETH COLANER

STEPS TO TAKE TO AVOID SPAM: A CHECKLIST

DO

- ✔ Classify spam as spam or junk when it hits your email inbox
- ✔ Add bad email addresses to a blacklist or blocked list
- ✔ Report abuses when possible to the FTC (spam@uce.gov) and your ISP (usually something such as abuse@[service providername].com)
- ✔ Be smart about your Web habits—what you download and the links you visit can invite malware, which opens you up to spammers

DON'T

- ✔ Open or read suspicious emails or follow links from senders you don't know
- ✔ Download images in a suspicious email
- ✔ Reply to or attempt to unsubscribe to a spam email
- ✔ Provide a link to your email address anywhere online
- ✔ Use the same email address for sensitive information, such as bank records or credit card statements, and registering for online newsletters, lists, and other less rigorously secure online activities

The Doofus Factor

I read a lengthy, statistic-laden report recently, published by the Internet Crime Complaint Center (www.ic3.gov). I highly recommend it for anyone suffering from the heartbreak of insomnia.

The report stated that last year, U.S. citizens lost more than $550 million as a result of Internet fraud. This is more than twice the loss reported in 2008. I have a theory why Internet-related fraud is growing so rapidly. I believe the increase is directly attributable to what I refer to as The Doofus Factor. To some individuals, it may appear that I'm blaming the victims, though I prefer to think of it as "tough love." Let's look at a few examples.

According to the report, the most frequent fraud complaint is the "advance-fee" scam in which—I'll be nice—less-enlightened individuals are persuaded to send money in order to receive windfalls that (surprise, surprise) never arrive. What are these people thinking? Do they really believe that an email from a deposed Nigerian king, promising millions of dollars in exchange for their personal assistance, is legitimate?

I'm sorry, but any bamboozlee who thinks that he or she was carefully selected as a trustworthy individual into whose checking account will be deposited the fleeing royal family's fortune has no business being on the Internet.

Another popular fraud is the hit man scam. In this piece of digital drivel, emails purportedly written by hit men are sent to individuals threatening to kill them. How charming. Fortunately, these are hit men with a heart. Recipients are advised if they pony up a few thousand dollars, they will be spared. It's hard to believe, but last year, thousands of people sent money orders (no personal checks, please) to a post office box to save their own lives. If that doesn't beg the question, "How much more diluted can the intellectual gene pool become?"—I don't know what does.

And let's not forget about all those big lottery winners: One day, they're sitting at home, watching cat-flushes-toilet videos on YouTube, and out of the blue arrives an email notification: "Congratulations! Your email was randomly selected as the winner of the International Lottery. You have been approved for a lump-sum payout of $500,000. To claim your winnings, contact the agency name that follows the body of this message."

Oh, happy day! When the joyous doofus initiates contact, he is instructed to send $500 for expenses in order to process his winnings. Additional fee requests follow, right up until the point that the dim-witted dupee realizes that there is no lottery. Oh, the heartbreak!

There are countless other examples, but I think you get the point. As idiotic as these scams are, people lose hundreds of millions of dollars each year in this manner. Therein lies my mission, dare I say my challenge: I don't want a single reader (or married, for that matter) to be swindled, flim-flammed, bilked, hoodwinked, or (gasp!) hornswoggled.

Email notifications to the contrary, you haven't won anything, you're not going to win anything—particularly in the case of a lottery that you haven't entered—and nobody is going to deposit money into your checking account because you're a nice person or in possession of a lucky email address.

So what can you do to avoid being victimized? First and foremost, there is no substitute for good, common sense. And because you are reading *Smart Computing* magazine, clearly you have that in abundance. When making decisions that involve parting with your hard-earned dollars, don't simply react. Instead, take your time, discuss it with others, and remember the old axiom that if something sounds too good to be true, it usually is.

In addition, I implore you to do your homework. If you receive any unsolicited offer, opportunity, or notification, run a Google search or investigate it on Scambusters.org, Hoaxbusters.org, Snopes.com, or TruthorFiction.com.

If you are absolutely committed to sending money, use a credit card (preferably your own). Many people fear having their credit card information stolen online. In truth, using a credit card is a very safe way to pay online. Your liability is limited to $50, though most major credit card issuers have zero-liability policies in the case of fraud.

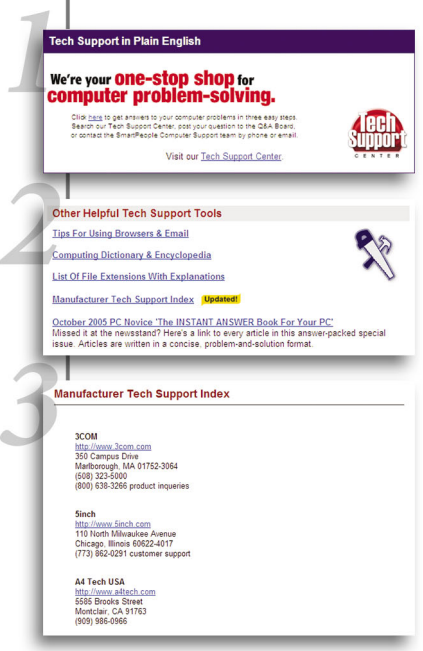
As a last resort, after concluding your own investigation, if you are still not sure what to do, forward whatever offer or notification you received to me at MrModem@gmail.com and get ready for some tough love.

Mr. Modem, (Richard Sherman) *is an author, syndicated columnist, radio host, and publisher. "Mr. Modem's Weekly Newsletter" provides personal responses to subscribers' computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit* **www.MrModem.com**.

Manufacturer Index

Technology can be a wonderful thing. But, what happens when your computer, router, or software program goes on the fritz? How are you going to fix it? Better yet, *who* can you contact to fix it? When you need to contact a manufacturer for tech support but can't find its information, look no further! SmartComputing.com's Tech Support Center provides a list of manufacturers from D-Link and Netgear to Dell and Xerox.

1. Go to www.smartcomputing.com and click the Tech Support Center link.
2. Scroll down to the bottom of the page and click the Manufacturer Tech Support Index link under the Other Helpful Tech Support Tools section.
3. Manufacturers are listed alphabetically, so you can find contact information quickly and easily. We provide each manufacturer's Web site address to make finding answers simple. Customer phone numbers and company addresses are also listed.
4. Be sure to check out the hardware and software vendor contact information at the bottom of the page, as well. The links will connect you to Microsoft's vendor contact information lists. The lists are quite extensive and contain a wealth of information in one easy-to-navigate location.



The next time your router goes haywire or your software isn't working properly, check out the Manufacturer Tech Support Index, contact the manufacturer directly and get the answers you're looking for today!

Speak & Spell

In June 1978, Texas Instruments introduced the Speak & Spell, an electronic learning aid for children. The Speak & Spell wasn't the first talking toy, but it was the first to synthesize voice on a single silicon chip.

Presidential Internet Address

Ten years ago this month, President Clinton gave the first presidential address that was broadcast online. In it, he spoke of ways to mold a more "high-speed, high-tech, user-friendly government."

Digital Editions

The new digital edition of *Smart Computing* lets subscribers flip through a virtual version of the monthly print magazine. Zoom in to enlarge text, download a copy of the file to read offline, and more. Log on to SmartComputing.com and click Digital Editions to get started.

Smart Computing's Dictionary & Encyclopedia

congestion

An overload of data on a communications path. Congestion caused by a high volume of traffic on the Internet, for example, sometimes results in network slowdowns.

STAYING CONNECTED

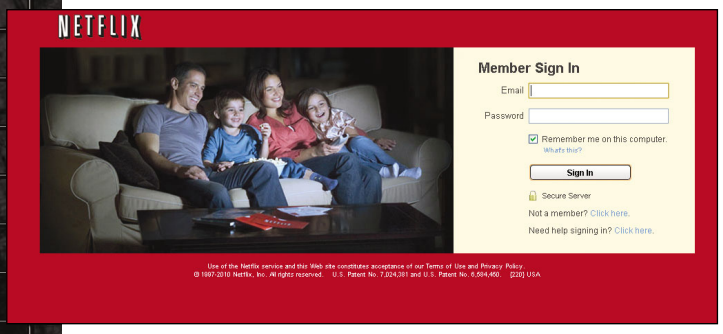
OFFLINE LIFE IS NO LIFE AT ALL

The No. 1 reason to have a home network is to allow two or more computers to share Internet access, according to ABI Research. And now that at least 76% of the U.S. population has an online connection at home (according to Internet World Stats), it's more important than ever to keep your home LAN in good working order.

That's easy enough most of the time. Barring the occasional Internet hiccup, most home networks continue to run without any help from their users beyond an occasional router or modem reset. (That's the alpha tip right there, by the way. Many times, you can clear up a network or Internet connection problem by turning off your modem or router, waiting a few seconds, and then switching it back on again. You're welcome.)

The trouble is, of course, when that occasional Internet hiccup morphs into a prolonged outage of indeterminate origin. The trouble could be with the Web itself, but for all you know, it could very well lie with your home network. And, of course, one of the side effects of being involuntarily offline is that you won't have access to the wonderful troubleshooting aids of cyberspace. Thank goodness for print magazines, eh?

For many of us, losing Internet or home network access is almost as bad as losing electricity. As with house current, it's kind of startling how much the World Wide Web has pervaded our lives. For work and for play, the online world inextricably intersects the offline world more and more each year.



No Netflix streaming? No way!

When the network goes down, so do many avenues of communication we tend to take for granted. We're talking about email; forums you frequent; Twitter, Facebook, and other social networking sites; and more, such as instant messaging. Sure, you can text or call a few people, but chances are good that you don't have phone numbers for everyone in your contacts or friends lists. Good thing there are sites such as Whitepages.org . . . when you can reach them, that is.

Forget about telecommuting or checking your workplace inbox, too. Unless your employer provides you with network access through a smartphone, or unless you have an air card as an alternative means of logging on with a laptop, you won't be getting much work done from home.

OK, well, you'll just go out, then. Just a quick check of a weather site and . . . nope. Even simple things such as looking up local business' addresses and store hours become off-limits when your Internet connection is down.

Ah, well; maybe you didn't have enough disposable income to spend in the first place. You'll just check your account balance via online banking. Or not. Even your stock ticker Desktop gadget is out of commission, no pun intended. At least you won't be tempted to spend money you may or may not have at Amazon.com or Newegg.com, because they'll be inaccessible, too.

Fine, then. The universe is obviously telling you to enjoy some slack time. Maybe you should just entertain yourself with things you already own. But it won't put you in better spirits to realize that your HDTV (high-definition television), BD (Blu-ray Disc) player, or game console no longer has a link to streaming video services. Thanks to YouTube, Hulu, Netflix, and others, you've ended your occasionally torrid relationship with your cable TV provider. Only now, you're entertaining the thought of crawling back.

And then there's music. Having grown tired of repetitive local radio stations, irreplaceable music player batteries, and your media player software's perplexing habit of "forgetting" your playlists, you've come to embrace customizable Internet radio services such as Pandora and Slacker. Of course, they're dark today, but at least you can find some new tunes on music blogs or Amazon.com's MP3 store, right? Er, no.

You could play a video game, assuming that it's not a multiplayer or browser-based title. But actually, even certain single-player games require Internet access before you can play them.

We could go on and on, but you really don't want us to. Instead, let's get on with the show. Turn the page, and let's get to fixing your network or Internet connection so your life can return to some semblance of normality.

BY MARTY SEMS

TROUBLESHOOT WIRED NETWORK CONNECTIONS

Get Reconnected In No Time

A dependable network connection is like your lower back: You never really appreciate how essential it is and how easy it makes life until it seizes up and stops working. And while wireless networks definitely score on convenience, nothing beats the performance of a good Gigabit Ethernet wired connection. Unfortunately, "wired" and "permanent" aren't synonymous. Bad things can happen to good LAN (local-area network) links. We've pulled together some of the most likely disconnect scenarios to try and get you back in network action ASAP.

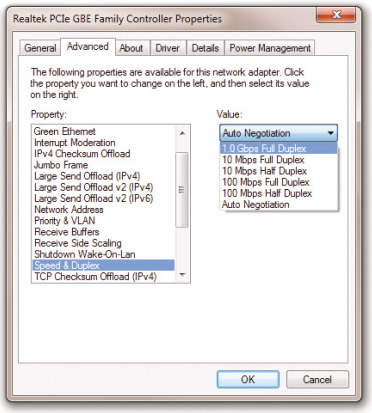
Problem: **The LAN goes down intermittently every few minutes to hours.**

Solution: Network troubleshooting can be extremely tricky, but intermittent problems are often either thermal or interference-based in nature. Thermal problems can be less about the temperature in your room and more about the internal temperature of your network adapter or switch. (We'll use the term "switch" here, understanding that this includes the switch functionality built into most home routers.) If you have a partially faulty chip in your switch, fluctuations in the chip's temperature caused by regular use might tip the device into malfunctioning. This is particularly true of switches kept in poorly ventilated, small spaces prone to higher temperatures. Here, the solution is to move your switch to a different location where it will have more breathing room.

The problem might also be related to RF (radio frequency) interference—noise thrown off by poorly shielded electronics that interrupts the functioning of your network device. Many people keep their switches next to other electronics. Try moving it as far away from any other electronics as possible and see if this remedies the problem.

Of course, you might just have a buggy adapter or switch. Swapping out for a new device is usually the next solution to try.

Problem: **My network connection between one PC and the switch keeps dropping intermittently.**

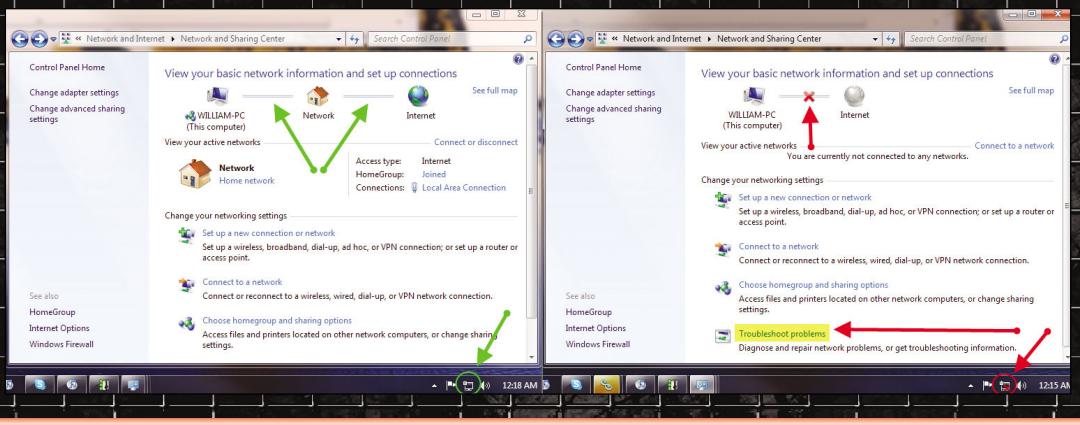


Sometimes, your router and system just don't know how to communicate at the same speed—so tell them.

Solution: There are many protocols, address assignments, and other under-the-hood factors that can contribute to ran-domly dropped network connections. For example, we once had a situation in which we didn't know that our office's NAS (network-attached storage) device was malfunctioning, and this was somehow disrupting the connectivity of other PCs on the LAN. You can search the Web and read about network issues forever, but a quick fix can often be found in just a few clicks.

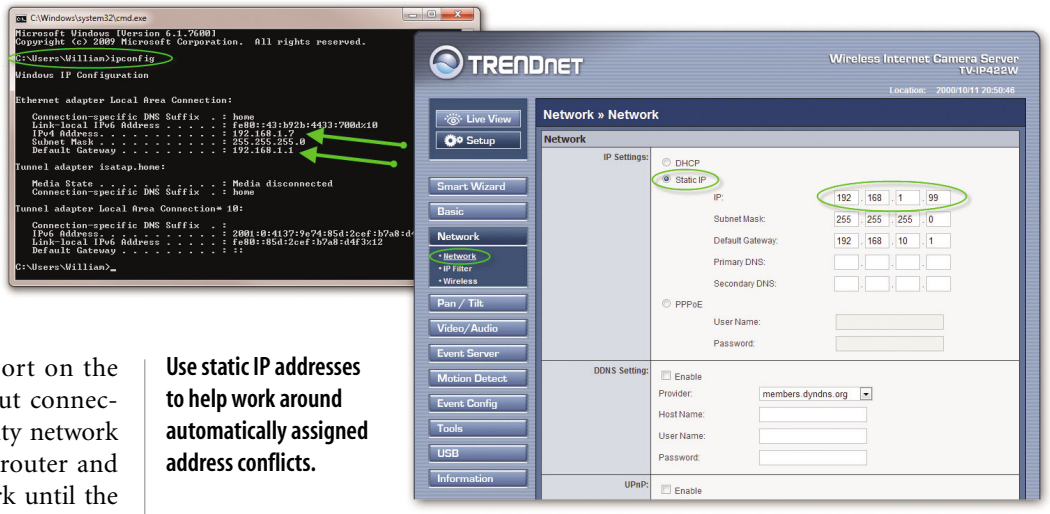
In the System Tray, you should see an icon for your network connection status. When your connection goes down, there will be a red X on the icon. In Windows XP, you can right-click this icon and select Repair; under Windows Vista, right-click this icon and select Diagnose And Repair; and in Windows 7, the option is called Troubleshoot Problems. A fancier view of the same situation can be found in the Network And Sharing Center, where you'll also find concise and expanded maps of your LAN. Selecting Troubleshoot Problems essentially resets your system's network adapter. Just as rebooting a PC often fixes software glitches, resetting the network adapter often fixes connection troubles. You probably won't know the root cause of the original connection drop, but at least your network might be back up and connected in only a few seconds.

If this doesn't solve the problem, you should start checking the physical network connections from your



The network map in Windows can be useful for narrowing down where problem links in your LAN might reside.

system to the switch. A cable may be damaged, or if you use a secondary switch between the PC and the router, that device might have been damaged (assuming it's still powered on). It's often a good idea to try a new cable and directly attach the PC to the LAN port on the modem in order to rule out connection damage and other faulty network components. Move to the router and farther out into the network until the faulty link is found.



Use static IP addresses to help work around automatically assigned address conflicts.

If the problem still exists, there are still many possibilities, but one recurring culprit is a conflict in auto-speed detection. Most modern network components default to automatically detecting one another's connection speeds and coordinating themselves accordingly. But this can be like two people meeting and trying to ask each other's names. When both parties do it at the same time, communication can collapse. On a LAN, the connection between the two points (usually the switch and client PC) simply drops. Fortunately, there's a place in the network device's Properties where you can select a specific connection speed and essentially put a name tag on that adapter.

In Vista/Win 7, you will go into the Control Panel's Network And Internet area. Select Network And Sharing Center (WinXP calls it Network Connections). In Win7, click Change Adapter Settings on the left. (Vista's link is called Manage Network Connections, and WinXP simply drops you into the Network Connections window.) Right-click your troubled adapter and select Properties. Click the Configure button in the Local Area Connection Properties dialog box.

Under the Advanced tab, you'll see a Property menu on the left and a drop-down menu for Value options on the right. You want a property that has to do with speed. Ours was called Speed & Duplex. Other keywords to look for might be Link Speed or similar. Once you find this property, set the value for it to the speed class of your card, such as 1.0 Gbps Full Duplex. Some settings offer full or half duplex options, and you'll almost always want to choose full duplex. Click OK to save the new setting. The network switch should now properly identify the adapter's speed and avoid any future confusion.

Problem: I know the network's physical cable connections are fine, but a couple of the systems on my LAN keep failing to connect.

Solution: You may have an IP (Internet Protocol) address conflict on your hands. We've seen this happen many times with PCs and other network devices. Every device on your LAN has its own IP address, just as every house has its own street address. When two devices are assigned the same IP address by the DHCP (Dynamic Host Configuration Protocol) server in the router, both can lose their connections. For this reason, we've

had to manually configure IP addresses for both our Xbox 360 and our TRENDnet surveillance camera.

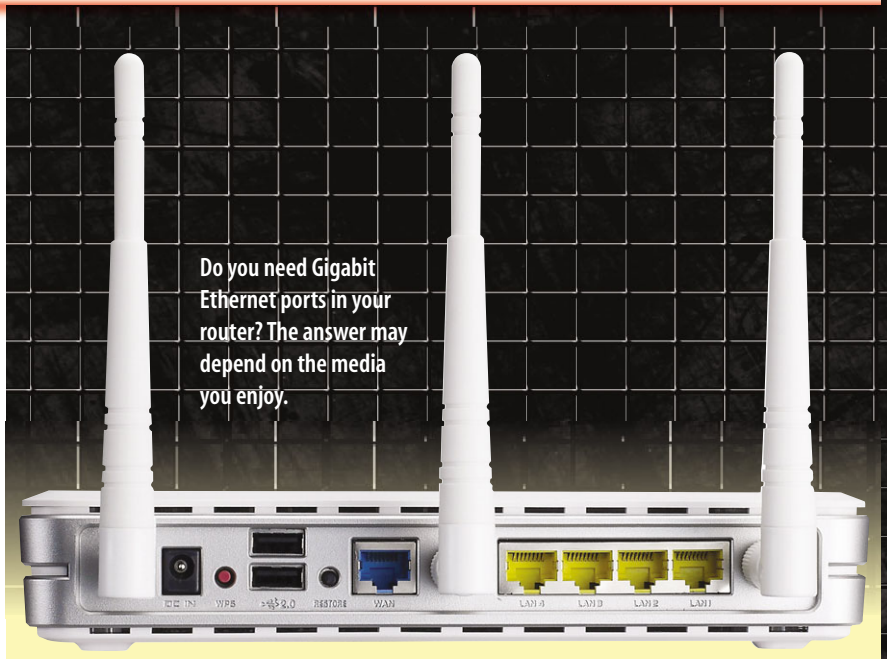
First, you need to see which addresses are being assigned by your router. Check your router's documentation and built-in option screens to see if you can find a list of assigned addresses. If not, in Vista/Win7, click the Start button and type **cmd** in the Search field. (In WinXP, click Start, click Run, and then type **cmd** in the Open field.) This will pop up a Command Prompt box. Type **ipconfig** and press ENTER. You should now see both the address of your router/gateway (192.168.1.1 in our example) and of the system (192.168.1.7). By default, most devices are configured with DHCP enabled, so the router automatically hands them an address. Instead, opt for a static IP address and manually change the last of the four numbers in your device's address to a value not used by any other device on the network.

Problem: Intermittent connection issues continue to plague both my wired and wireless devices.

Solution: After IP address conflicts, one of the most common faults we've seen is an improper MTU (maximum transmission unit) setting. A router can only handle so much traffic, and if it's flooded with too much, it can generate problems.

In general, most routers have trouble with MTU settings over 1500. However, some applications won't work if the setting is too low. (Xbox LIVE requires a minimum MTU setting of 1364.) The best thing to do is find the options page of your router's setup screens that contains its MTU size setting. Set the MTU option to Manual if needed and then start experimenting with different MTU sizes. For example, Linksys recommends starting with an MTU size of 1472 and working down by increments of 10 until connectivity is stable. ▮▮

BY WILLIAM VAN WINKLE



Do you need Gigabit Ethernet ports in your router? The answer may depend on the media you enjoy.

Do You Need A Gigabit Router?

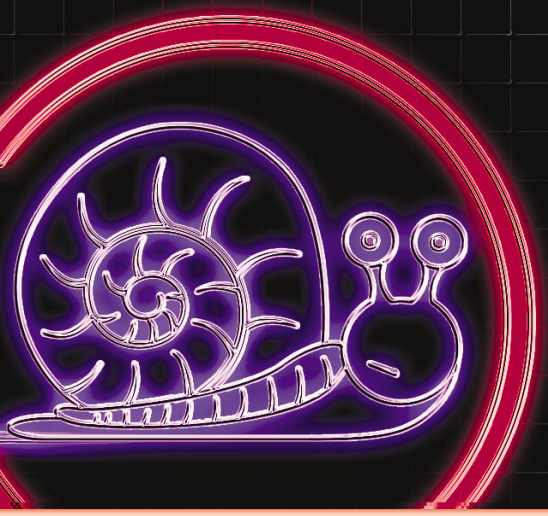
For many years, Fast Ethernet (100Mbps [megabits per second]) has been the de facto speed for wired home network connections. However, Gigabit Ethernet (1,000Mbps) has recently pushed down from high-end networking gear and into the mainstream. The price difference between the two technologies is now fairly small, and all but the cheapest motherboards now have Gigabit built-in. But if you have a Fast Ethernet switch or router, is it worth the price to upgrade to Gigabit?

If only one person uses the network at any given time, probably not. As multiple users hop on the network, though, or if you have multiple machines accessing high-bandwidth content simultaneously, you might want to start paying attention to the bandwidth requirements of your applications.

First, keep in mind that an Ethernet connection loses a certain percentage of its bandwidth to the overhead demands of networking and traffic processing—figure 30% lost to be safe. So, your Ethernet bandwidth might actually top out closer to 700Mbps for Gigabit or 70Mbps for Fast Ethernet. Compare this to your Internet connection speed. Providers such as Comcast and Verizon (FiOS) generally offer maximum download speeds of 50 to 100Mbps. So if all of your bandwidth needs stem from online applications, such as video streaming, you're going to probably bottleneck at your Internet pipe before you saturate a Fast Ethernet LAN.

On the other hand, say you're streaming HD (high-definition) video from a home server to two or three systems or entertainment devices around the house. A very good HD video stream usually consumes 20Mbps or less, but let's assume you're working at the highest possible spec for Blu-ray: 40Mbps. Two such streams may well exceed what a Fast Ethernet switch or router can handle, leaving you with lots of dropped frames and stream hiccups. An Xbox 360 can consume up to 7Mbps; Cable TV can take up to another 15Mbps. A mix of gaming and HD media streaming around the house very well might require Gigabit for stable performance—at the router/switch level, at least. But if you're not big into video and high-res 3D-style gaming, then Fast Ethernet will probably keep you happy for at least another couple of years. ▮

TROUBLESHOOT A SLOW CONNECTION

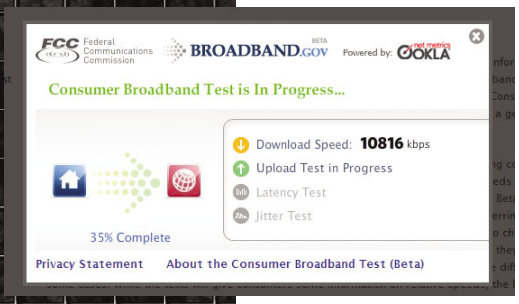


The Web Without Delay

No one likes to regularly wait for Web pages to load or pause online videos because playback stutters or stops. Issues such as these are generally caused by a slow connection, and no matter how fast your broadband service is advertised to be, your connection may sometimes seem sluggish. Here, we'll help you troubleshoot and provide solutions for the most common connection slowdowns.

Connection Types

Every ISP (Internet service provider) offers several tiers of service, but even the most basic level of broadband service, which generally starts at 768Kbps (kilobits per second) or 1.5Mbps (megabits per second), should completely deliver most Web pages in less than 10 seconds. Streaming audio requirements are also fairly modest. For example, the Internet radio station Pandora (www.pandora.com) indicates that you need a connection that consistently delivers a bandwidth of 150Kbps.



The government's Consumer Broadband Test can help you determine your current broadband speed, and it also helps the government identify the quality of broadband service in your city.

Speed requirements for viewing online video are often higher than the basic ISP service tier. For instance, Netflix (www.netflix.com) recommends a connection of at least 1.5Mbps for its Watch Instantly service, which streams TV shows and movies directly to Internet-connected devices. The Watch Instantly service tests your Internet connection speed and changes the video quality to match your connection speed. For DVD-quality video and audio from Watch Instantly, you'll want a connection of at least 3Mbps. Hulu.com, another popular video streaming Web site, recommends a Web connection of at least 3.5Mbps to watch its HD (high-definition) video, which is currently recorded at the HD quality of 720p. Broadcasters ABC, NBC, and Fox recommend a connection of at least 3Mbps for the networks' 720p HD streams.

Test Your Connection

You may not be receiving the amount of Internet bandwidth that you pay for. Thankfully, the government has recently announced the Consumer Broadband Test (www.broadband.gov/qualitytest/about), which measures the current speed of your broadband connection. By running the test, you're also helping the government analyze the average quality of the broadband in your city. Visit the URL listed above and click the I Want To Test My Connection Quality button. Fill out the questions, select Go To Test, and click the Begin Test button. When it finishes, you'll be able to see your download and upload speeds listed in Kbps. To convert the results into Mbps, just place a decimal point three numbers to the left. For example, a download speed of 5,183Kbps would be 5.183Mbps.

If the test reports your connection to be much slower than expected, before you call your provider, try running the Consumer Broadband Test on a second computer, preferably over a wired connection, to eliminate the possibility of a bad network adapter or cable or a poor Wi-Fi signal. If your connection speed is still significantly slower than what you pay for, call your ISP and have it fix the problem.

Hardware Requirements

The symptoms of a slow Internet connection might also occur when your hardware can't keep up with the online content. Most Web sites

and Internet radio can run on systems with basic hardware. For example, we found that most Internet radio stations don't even list minimum system requirements. But similar to your connection speed, online video streams may require a hardware upgrade. Slingbox indicates that to stream HD movies, you'll need a PC with at least a 2.4GHz dual-core processor and 2GB of RAM. You may experience a variety of issues, such as scenes cutting in or out, on a computer with hardware below specifications.

Shared Network

Let's say that your ISP provides 6Mbps Internet to your home, which has three computers connected to your home network. At one computer, your daughter is streaming an episode of "Lost" that she missed, which takes up around 2.6Mbps of the available bandwidth. At the same time, your son is playing an online video game, which might use as little as 768Kbps one second and up to 1.5Mbps the next. Thus, when you get online, the leftover network connection could be less than 2Mbps—and that's if your connection is working at full speed, which we'll cover next.

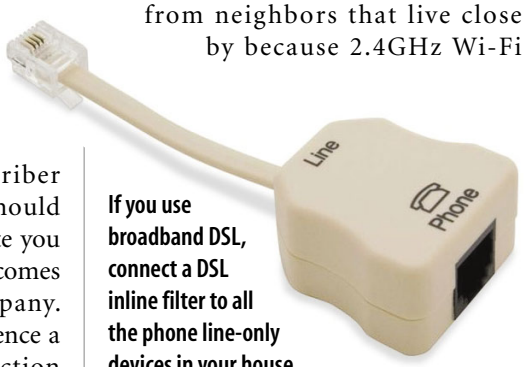
Congestion

The speed of your network connection can also be affected by the number of people online in your neighborhood. With broadband cable, both the cable TV and cable Internet are sent over the same circuit, which you share with an unknown number of others. You may experience slow downloads during specific periods of time, such as from 5 p.m. to 8 p.m., when people are most likely to be watching TV or using the Internet. If you regularly experience slowdowns, you should contact the cable ISP and alert them to the problem. The ISP may add a service station that will alleviate the congestion.

With a DSL (Digital Subscriber Line) connection, the speed should consistently work around the rate you pay for, because the DSL service comes directly from the phone company. That being said, you may experience a slower-than-advertised connection when the other devices connected to your phone line, such as a landline phone or fax machine, are in use. You can connect an inline DSL filter or simply disconnect the hardware to prevent the devices from slowing your DSL connection. If you've already connected filters to your device, try replacing the line filter. They are available at most hardware stores for around $5 to $10.

Wireless Signal Interference

With Wi-Fi, you'll want to avoid other radio signals, which include microwaves, baby monitors, Bluetooth devices, landline phones, and mobile phones. Typically, a radio signal device causes more interference when the device is in close proximity to your wireless router. So if you can, it's helpful to move the interference-causing device—or your wireless router—to a spot where you're less likely to experience trouble. You may also experience Wi-Fi interference from neighbors that live close by because 2.4GHz Wi-Fi signals generally have a reliable range of around 100 feet. Similarly, nearby neighbors may also be able to piggyback on your connection if your network is unsecured, which may significantly slow your download speed. Make sure your network is encrypted to ensure that no unauthorized people can access it.



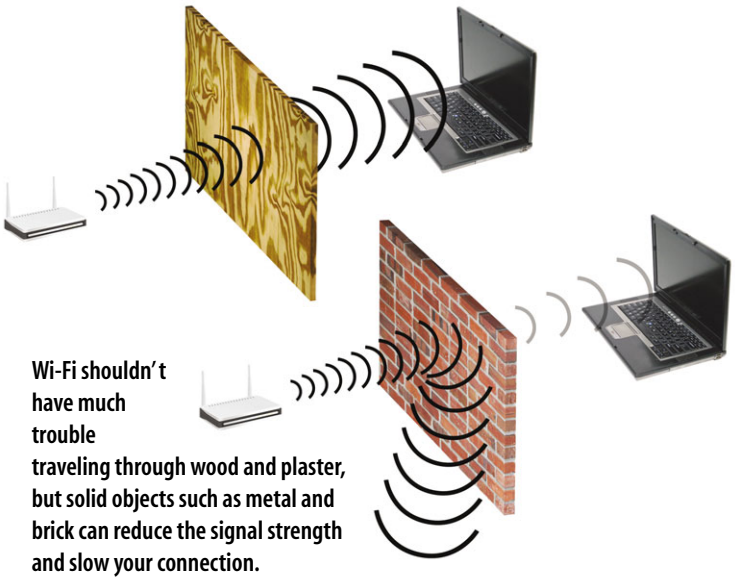
If you use broadband DSL, connect a DSL inline filter to all the phone line-only devices in your house.

Radio waves can have trouble passing through certain types of building materials. The most problematic are metal, mirrors, concrete, brick, and water, because the objects naturally reflect or absorb radio waves. That being said, Wi-Fi signals don't have too many issues with wood, plaster, and cinder

Broadband Speeds

Here's a quick rundown of the average broadband service tiers and type of usage you can typically expect based on the speed. Although technically defined as speeds greater than 56Kbps, available broadband speeds vary widely by provider.

1.5Gbps	Provides enough bandwidth for one user to surf the Web and stream audio or stream standard-definition video
3Mbps	Good for households with multiple Web users or a single user who wants to stream HD-quality video
6Mbps	Capable of supporting simultaneous video streams, as well as a couple of people surfing the Web
12Mbps	Perfect for home offices that need consistent speed for video chat and to download files and other content for work



Wi-Fi shouldn't have much trouble traveling through wood and plaster, but solid objects such as metal and brick can reduce the signal strength and slow your connection.

Wi-Fi routers and adapters with MIMO technology, such as Trendnet's TEW-638PAP ($86.99; www.trendnet.com) seen here, help extend signal range and strength for a faster, more reliable wireless experience.

block. If you've determined that Wi-Fi interference is causing your slow download speeds, consider upgrading your wireless router and Wi-Fi adapter to utilize the new 802.11n standard with MIMO (Multiple Input/Multiple Output) technology. Routers and Wi-Fi adapters with MIMO feature two or three antennas and can receive data that arrives at slightly different times, such as if it bounces off a wall or ceiling, and will improve the range and reliability of your Wi-Fi network.

Get Rid Of Malware

Viruses and spyware can slow down your Internet connection. Your Internet connection will seem particularly slow if your computer has become part of a botnet, where the PC is set up to forward emails and viruses to others. A worst-case scenario is that the virus can actually block your Internet access. If you believe the cause of your slow connection speed is due to a virus or spyware, you should invest in security software. Ideally, you will acquire a security suite that includes virus, spyware, and firewall protection.

IE Speed Tips

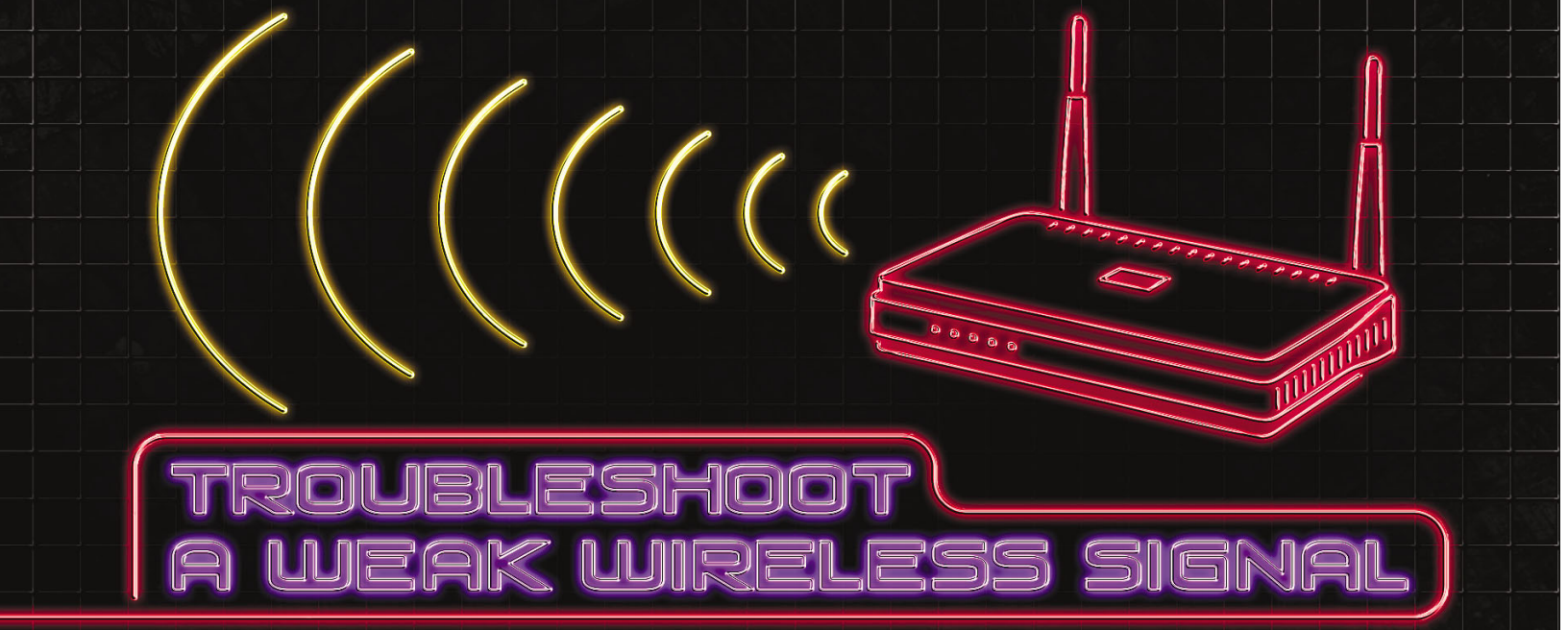
IE (Internet Explorer) stores temporary Internet files, URLs, cookies, and Web form information. In theory, the Web information is designed to help speed up repeat visits to your favorite Web sites. But over time, IE's Browsing History can bog down your Web browser, because it takes too long to search for the information IE needs. To delete IE's browsing history, click the Tools menu, open Internet Options, select the General tab, and click the Delete button under Browsing History. From the Delete Browsing History window, there are checkboxes for the various types of Web data that IE saves. Place a check mark in each of the options you wish to delete. For speed's sake, we recommend that you at least delete the Temporary Internet Files and Cookies options.

If your computer's hardware isn't capable of handling Web sites with demanding videos and graphics, you may also want to reduce the type of media IE can play. Click the Tools menu, open Internet Options, select the Advanced tab, and scroll down to the Multimedia section. From here, you can block IE from displaying images, playing animations, and producing sound. Note that you must restart IE before the changes will take effect.

Reduce Browser Add-Ons

All the popular Web browsers allow you to install plug-ins, such as multimedia codecs for the latest video or toolbars to expedite your Web searches. However, many of these browser add-ons may also access the Internet to provide you with up-to-date features and news items. The plug-ins can be real time-savers when consistently used, but we're betting you'll also find a large number of extras that installed alongside other software you've downloaded and purchased. To remove plug-ins in IE, click the Tools menu, open Internet Options, select the Programs tab, and click the Manage Add-ons button. From the Manage Add-ons window, you can view the variety of extensions, toolbars, and accelerators that run in IE. To disable one, click it and select the Disable button at the bottom of the window.

BY NATHAN LAKE



Troubleshoot A Weak Wireless Signal

Make A Strong Connection

The biggest benefit to having a wireless home network is the freedom it gives you to connect to the Web from anywhere in your home. Even if your router is located in the top level of your home, you can still surf the Web with your netbook in your living room while your spouse streams an HD (high-definition) movie in the basement. When you aren't able to tap into a strong wireless connection from the workspace of your choice, however, it can be frustrating and impede your ability to be productive. There are several factors that could be contributing to a weak signal or a connection that drops frequently, and many of the solutions are easy to implement.

Adjust The Wireless Router

Where you decide to put your wireless router greatly determines how strong the signal is in other parts of your house. Most people have their routers in their home offices or where other computer accessories, such as the printer, are located. If that location isn't near the center of your home, you aren't maximizing the capabilities of your router. For example, most routers have omnidirectional antennas that produce signals in a radius. If your router is located in a corner room, you are projecting part of your signal outside the house. Putting the router on the main floor in a central room will help keep the majority of the signal inside your home. If you aren't flexible about where your router can be positioned, consider replacing your omnidirectional antenna with a high-gain antenna, which projects a wireless signal in a single direction.

In addition to putting your router in a central location, be sure it's not surrounded by materials that could block its signal, such as metal filing cabinets.

To direct your signal in a particular direction, purchase a high-gain antenna, such as the 6 dBi Detachable High Gain Directional Antenna from Buffalo ($19.99; www.buffalotech.com).

Other obstructions may include walls, water pipes, and floors. If you place your router away from these obstructions, the signal has a better chance of getting to the rest of the house.

If you must place the router in a noncentral location, you can always purchase a wireless repeater. These devices are designed to extend the range of your router's signal by relaying it to other parts of your house. For example, if your router is in the home office located on the top floor of your house and you want to stream Internet radio in your basement, your signal might not be strong enough to accomplish it. You can add a wireless repeater somewhere in the middle (such as your kitchen or main-floor living room) to act as a bridge between the two devices, so your connection is as strong in the basement as it is in other parts of the house.

Alter Your Computer & Devices

Wireless networks not only depend on the wireless signal produced by your router, but they also depend on the signal the router receives from your computer and other wireless devices. There are a handful of reasons why a computer might not be sending back a strong signal from its external or internal wireless adapter.

To help your wireless signal reach all areas of your home, consider a Universal WiFi Range Extender ($89.99; www.netgear.com).

The problem could be stemming from an outdated firmware driver for your network adapter or router. To find the latest updates for these devices, go to the manufacturers' Web sites and check under the Support or Downloads page (or something similar). You can also check whether your network adapter needs updating through Windows Update. For Windows XP, Windows Vista, and Windows 7 users, open the Start menu, select All Programs, and then open Windows Update. Click Check For Updates located in the top-left corner of the window. If there are any updates for your network adapter, they will be listed. You can also find updates by pointing your browser to the Microsoft Update Center (update.microsoft.com).

If you are not using the latest 802.11n wireless technology (see the "Wireless N" sidebar), you might be outside the reach of your router's wireless signal. Although it's possible for 802.11b/g networks to send signals up to 300 feet away, it's more likely the signal will broadcast approximately 90 to 125 feet (depending on the environment). Also, the signal gets weaker as it is projected up and down. So, if your router is in the basement and you are on the second level of your home, for example, your signal might not be able to reach you. Consider upgrading to 802.11n, moving your computer closer to (or on the same level as) your router, or repositioning your router if you enjoy working in a particular place that's out of its reach.

Modify Advanced Options

You can also adjust the advanced settings on your wireless network connection to optimize your wireless signal.

To get to the advanced settings in WinXP, click Start and Control Panel. Choose Network And Internet Connections and select Network Connections. Right-click Wireless Network Connection and then choose Properties. Select the Configure button under the General tab and open the Advanced tab.

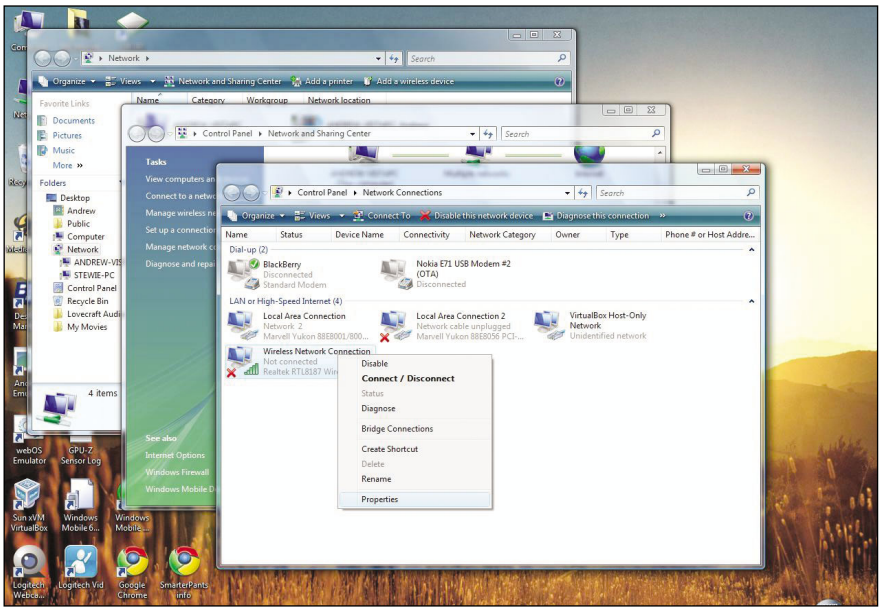
Vista users should click Start and open the Control Panel. Select Network And Internet and then click Network And Sharing Center. On the side panel, click Manage Network Connections. Right-click Wireless Network Connection and then choose Properties. Select the Configure button under the General tab. In the new box, select the Advanced tab.

In Win7, click the Start menu and then open the Control Panel. Click Network And Internet and then Network And Sharing Center. Under Connections, select Wireless Network Connections. Click the Properties button, click the Configure button, and then select the Advanced tab.

Under Properties, you will have a variety of settings you can tweak, depending on the built-in wireless adapter brand your computer has. If you are dealing with large files or streaming media (music, video, or voice), tweaking either the Throughput Enhancement or the WMM (Wi-Fi Multimedia) properties will improve some types of performance.

For those who have Throughput Enhancement listed as an option, select Enable under the Value drop-down menu. Throughput Enhancement improves performance when you are streaming media or sending large files. However, it is not going to hasten the process of downloading files from the Web or loading Web pages, and it won't improve the performance of Web videos.

The Belkin N1 Wireless Notebook Card ($89.99; www.belkin.com) fits into your CardBus slot to deliver 802.11n to your laptop.



You can find the Properties menu for your wireless network connection by right-clicking the corresponding icon.

WMM, which is a feature created by the Wi-Fi Alliance, is added to some routers to offer enhancements to some types of tasks. Although not all routers support this capability, the ones that do will prioritize media files when doling out bandwidth to devices and applications when WMM is enabled under Value. Whenever you enable either the WMM feature or the Throughput Enhancement feature, note that it might affect the performance of other devices connected to the network. Out of courtesy for other members of the household who might be surfing the Web at the same time, be sure to let them know any changes you've made or disable the feature when you're done.

Data Rate, which is also listed under Property, should be listed as Best Rate under Value. The data rate specifies how quickly information is transmitted. By selecting Best Rate, you are ensuring the rate will be as high as allowed by the router and the wireless adapter. The maximum pace that data can be transferred is limited to whatever option you choose.

For those living in multiple family housing, such as an apartment complex or a townhouse, changing the Roaming Aggressiveness under Property could help your wireless performance. When the Roaming Aggressiveness (sometimes called roaming tendency) is set to high or aggressive, it will try to connect to signals from other routers stronger than the signal coming from your router. To avoid competition from other routers, dial down the Roaming Aggressivness to a Low or Conservative setting.

Pick Up The Pace

You might also run into problems if you have several networked computers or devices simultaneously performing bandwidth-intensive tasks. For example, some activities, such as gaming and streaming HD movies, use more bandwidth than simple Web surfing. So, if you have several people in your house using the network to do things that eat up bandwidth, the overall performance of the network will suffer.

A quick, reliable wireless network connection ensures productivity and provides Web-based entertainment in your home. Rather than remain frustrated with your unreliable signal, try the aforementioned tips and get back to enjoying your time on the Web. ❚❚

BY TESSA WARNER BRENEMAN

Wireless N

If you have an 802.11b/g router and devices, your wireless network isn't living up to its full potential. Wireless N (802.11n) is the fastest available wireless specification with a theoretical maximum data rate of 300Mbps (megabits per second). This far outpaces the slower, older 802.11b (11Mbps) and 802.11g (54Mbps) wireless standards. Additionally, 802.11n routers send out signals twice as far as other wireless technologies and can reach devices more than 300 feet away.

Wireless N devices have MIMO (Multiple Input/Multiple Output) technology, which utilizes a handful of antennas to enhance communication between the router and wireless devices in order to produce better range and speeds. With more antennas, the router can communicate more frequently with wireless devices.

Purchasing a new 802.11n router isn't enough to deliver the benefits of Wireless N to your home wireless network, however. Because 802.11n is backward compatible, it will work with 802.11a/b/g devices, but the range and speed will be limited to the quickest technology supported by your wireless device. For example, if you have a router with 802.11n technology working with a computer with a built-in 802.11g wireless card, you will only get the speed and range offered by 802.11g. To enjoy all the benefits of Wireless N, both the router and the connected device must be 802.11n-compliant.

You don't need to run out and buy a new computer with 802.11n, however. Instead, you can purchase an external wireless adapter. You can find adapters that plug into your USB port or that are built for your PCI-E (Peripheral Component Interconnect Express) card slot or CardBus slot. You can also have Wireless N cards installed inside your desktop or laptop. ❚

TAKE CONTROL

Troubleshoot With Windows' Command Prompt

One of Windows' greatest contributions to easier computing was making the GUI (graphical user interface) near-universal. Microsoft wasn't the first to introduce the concept, but it certainly dominated the market.

Most people associate the use of text-based commands with old-school "green screens" or niche technologies. The command line isn't gone entirely, however. Mouse pointers, expandable menus, and dialog boxes are helpful, but the simplicity and directness of typing a single command and getting an immediate response will always have value. When you want to bypass all those layers of user-friendly controls, you'll find the Command Prompt is a powerful tool, and it's not as intimidating as many people think. We'll run through some of the basic commands you can use to harness the Command Prompt's power and speed.

In Command

Launching the Command Prompt in Windows Vista or Windows 7 is as easy as clicking Start and typing **cmd** in the Search field. In Windows XP, click Start and select Run. Next, type **cmd** and click OK. You can also find a Command Prompt menu item under Accessories in the All Programs listing.

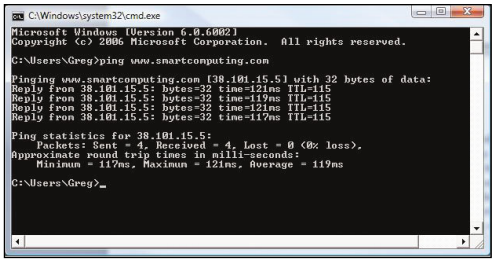
Orienting yourself in the Command Prompt environment is easy once you know what you're looking at. The command line itself is always preceded by your current directory. This tells you what portion of which drive your commands will apply to. For example, you may start at C:\Users\Greg with a right facing arrow (>) ending the directory listing and indicating that you should enter your command after the symbol. Any commands in our example will apply to the Greg subfolder in the Users folder on the C: drive.

You will also see a flashing cursor that indicates where any keyboard entries will be placed on the command line. Navigate backward and forward (using the Left and Right arrows on your keyboard) within a command to edit what you've already typed or to reuse portions of a previous command.

Network Troubleshooting

One of the most useful areas for the command line interface today is networking. Let's start with IPCONFIG. From the Command Prompt, type **ipconfig** and press ENTER. Windows will display your computer's IP (Internet Protocol) address, which uniquely identifies your machine on the local network as well as the Subnet and Gateway. You won't normally have much use for the Subnet, but the Gateway is much more helpful—it tells you what address the computer is using to access the WAN (wide-area network), which usually means the Internet. If you need to know what address your Internet router is using (to log in to its browser interface or ping it for availability), entering the IPCONFIG command and checking the Gateway results will provide that information.

IPCONFIG has several parameters (also called switches), as do most commands. Command Prompt parameters provide additional instructions for a command and come after the basic command itself, preceded by a forward slash (/). There are more than a dozen switches for IPCONFIG, but the main one is /renew. The /renew switch (entered as ipconfig /renew) will cycle your network connection, retrieving new credentials for IP, DNS (Domain Name System), and Gateway from the assigning router or server. You may or may not actually receive a new IP address, but at least if it stays the same, you'll know it was recently refreshed and is currently valid. This is an important step when troubleshooting network problems—it lets you "reboot" your connection without having to restart the entire computer.



The PING command is invaluable in troubleshooting network and Internet problems.

PING is another invaluable network troubleshooting command. PING sends a tiny packet of data to a specified

location and records basic information, including response time, for the destination. The PING command is helpful in a couple ways. For example, if Internet Explorer doesn't appear to be working, pinging Google (ping www.google.com) can confirm whether the problem is with your browser or with your connection. You can also check connections and speed on your internal network if you know the IP addresses of the other machines. For example, once you know the IP address of your gateway (from running IPCONFIG), you can ping it to make sure your local machine can connect to the router. In addition, you can use PING to look up the IP address for a given server name, either public or internal. For example, pinging www.smartcomputing.com tells us that *Smart Computing*'s Web site is at 38.101.15.5. Note that administrators can opt to have servers ignore PING requests, so a timeout from an unfamiliar location, especially on the public Internet, doesn't necessarily mean that your connection (or the server) is down.

Local Commands

Network troubleshooting isn't the only use for the Command Prompt. It also provides shortcuts for a number of actions on your local machine.

Even though Windows Explorer is usually easier, Command Prompt can help you navigate Windows' file system. In the Command Prompt tool, use the DIR command to display the current file and subfolder contents of the current directory. You can change directories by using the CD command followed by the folder path. You can enter a complete path (cd c:\program files\), a subfolder in the current directory (cd cursors from the C:\Windows\ folder), or one of a couple shortcut codes. Entering two periods (..) after the cd command will take you up one level in the file hierarchy (for example, from C:\Windows\Cursors\ to C:\Windows\ ). Typing the backslash character after entering the CD command will jump you to the root level of the current drive (from C:\Windows\Cursors\ to C:\).

COPY, XCOPY, and ROBOCOPY are all variations of a copy command that replicates files, folders, and entire tree hierarchies. Each has its own parameters and limitations (with COPY being the simplest command and ROBOCOPY the most robust), but they all have a place in quickly and easily copying files and folders from one location to another.

Finally, the SHUTDOWN command comes in handy when you're having trouble closing applications or rebooting the system. It's also particularly useful if you need to reboot a remote computer using Remote Desktop Connection. SHUTDOWN has several parameters, including SHUTDOWN /r (restart), SHUTDOWN /h (hibernate), and SHUTDOWN /t xxx (shutdown after xxx seconds).

Tips & Tricks

There are a handful of universal Command Prompt shortcuts you should learn. You can view the parameters and syntax requirements for any command by adding the /? switch. For example, typing **ping /?** provides help on how to structure a complex PING command and lists all available parameters.

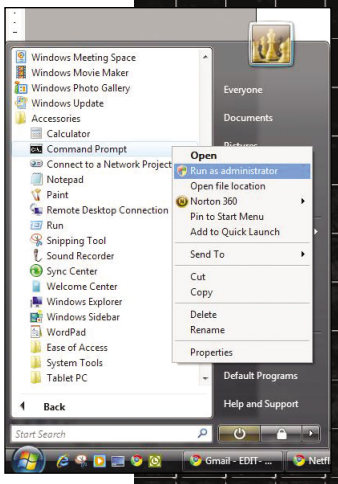
Use the Up arrow to scroll through each of your previous commands from a given session. This helps reduce duplicate typing when you're checking the same thing several times (such as a ping) or making a series of slight modifications (in an extensive copy operation).

Also, the CTRL-C command cancels a currently running operation. If you find that a DIR command lists more files and folders than you can use, pressing CTRL-C will end the scrolling. Similarly, if you're stuck in a PING command that just won't end, you can simply give up and close out of the Command Prompt.

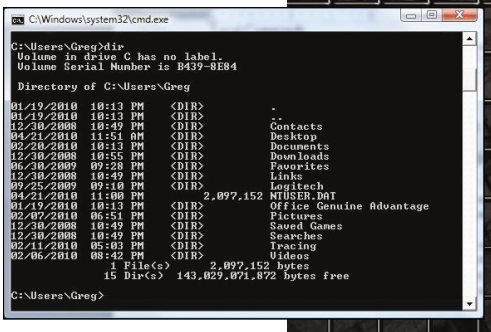
Finally, you should know how to run Command Prompt as an administrator, because not all commands are available to nonadministrator users. Instead of just pressing ENTER from the Start menu's Search box, hold CTRL-SHIFT while pressing ENTER. You can also right-click the Command Prompt menu option (under All Programs) and select Run As Administrator.

We can't cover all the hundreds of available commands, but we've hit a few highlights. Taking time to learn the specialized syntax of MS-DOS commands, plus the other shortcuts of the Command Prompt is the biggest part of the learning curve. You can find tutorials and help online as you seek to expand your familiarity with this persistent, if underappreciated, Windows utility. ❚❚

BY GREGORY ANDERSON



Opening Command Prompt from the Start menu provides the option to run commands as an administrator.



The DIR command displays the files and folders in a given directory.

ALL FOR ONE & ONE FOR ALL

Share Files Over A Mixed Network

Home networking has come a long way and is easier than ever, particularly if you have computers with Windows 7. In that operating system, the HomeGroup feature makes it dead simple to share folders or Win7's libraries, which are special folders that display content from multiple locations. There's just one problem: The HomeGroup feature is only available to Win7 users, so if you have an older version of Windows or a Mac, sharing becomes a bit more difficult.

This step-by-step guide focuses on sharing files among Windows XP, Windows Vista, and Win7 machines on the same network. If you have a Mac, check out the "Playing Nice With Macs" sidebar for tips.

Sharing With Windows 7

Step 1: Choose A Workgroup Name

A **workgroup** is a collection of networked computers. All of the computers you want to share files among must belong to the same workgroup. To see if a workgroup is already established, click Start, right-click Computer, and click Properties. If a workgroup name is listed, write it down for later use.

If there isn't a workgroup listed, set one up by clicking Change Settings in the Computer Name, Domain, And Workgroup Settings area of the Properties window. Click Change, select the Workgroup radio button, enter a workgroup name (write this down for future reference), and click OK.

Step 2: Create A Homegroup

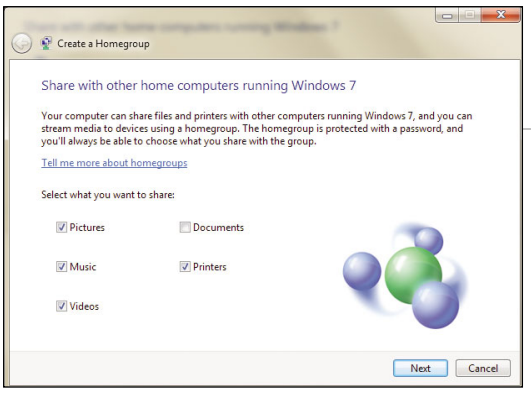
If you haven't set up a homegroup on the Win7 machine already, now's the time. Click Start, click Control Panel, click Choose Homegroup And Sharing Options, and click Create A Homegroup. Click the checkboxes next to what you want to share and click Next. Write down the password Win7 generates to easily add other Win7 computers to this homegroup later.

After the homegroup is set up (or if one was already created), click Start, click Control Panel, and click Choose Homegroup And Sharing Options. Use the checkboxes to determine what types of files and hardware are shared within the homegroup. Check the Stream My Pictures, Music, And Videos To All Devices On My Home Network box if you'd like to do that and click View Or Print The Homegroup Password. Write the password down or print it out for later use.

Microsoft recommends only allowing network users with password-protected accounts to take advantage of file and printer sharing, and we second that. This lets guests use your network without granting them access to shared files that may be private. To verify that the homegroup is configured this way, click Change Advanced Sharing Settings and scroll down to the Password Protected Sharing entry. Make sure the Turn On Password Protected Sharing radio button is selected and click Save Changes if necessary.

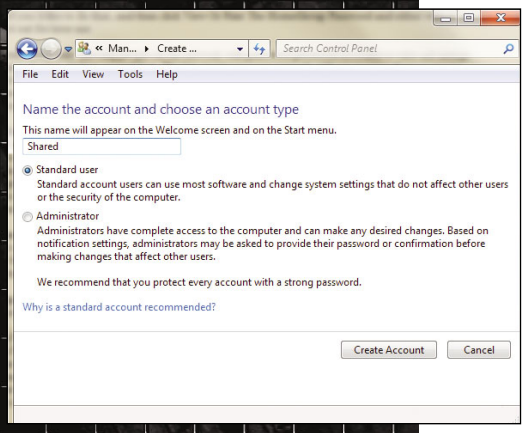
Step 3: Establish A Shared Account

To easily share files on the Win7 machine, you need to create a new password-protected user account that is accessible to everyone with which you

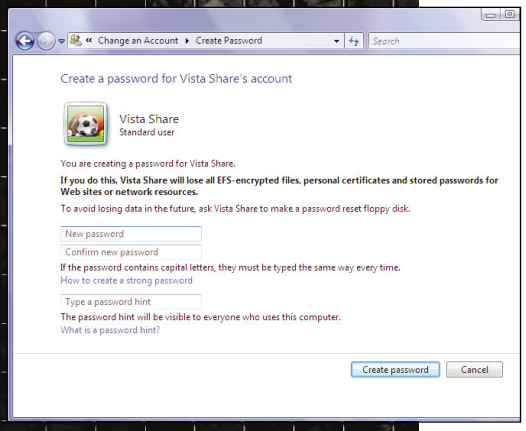


Windows 7's HomeGroup feature lets you easily share a variety of data among computers on the same network.

wish to share. Click Start, click the icon for the account you currently are logged in to (it's at the top of the Start menu), and click Manage Another Account. Click Create A New Account and give the account a name (we used Shared). Select the Standard User radio button and click Create Account. When the account's icon appears in the Manage Accounts window, click the icon, click Create A Password, enter the password you want to use for accessing the shared files, and click Create Password.



Creating a shared password-protected user account in Win7 is simple.



Using the techniques in this article, you must have password-protected user accounts set up on your Windows Vista and Windows XP machines.

Step 4: Log In To The New Account

Log in to the new account to ensure that it is set up properly. Click Start, click the arrow next to Shut Down, and click Switch User. Click the icon for the account you just created (Shared in our example), enter the password, let the Desktop load for the new account, and then repeat this step to log back in to your main account.

Step 5: Configure Other Win7 Computers

If you have any other Win7 machines, repeat Steps 1 through 3 to configure each of them for sharing.

Sharing With Windows Vista

Step 1: Check Your Account

The user account in Vista that you use to access the Win7 homegroup must be password-protected. To password-protect your main account if it isn't already, click Start, click the picture icon for your account at the top of the Start menu, and click Create A Password For Your Account. Enter a password and a password hint and click Create Password.

You can also create a separate password-protected account to access the homegroup files. Click Start, click the picture icon for your account at the top of the menu, and click Manage Another Account. Click Create A New Account, give it a name, select Standard User (if you want to limit permissions) or Administrator (if you prefer to grant the account unrestricted access), and click Create Account. Log in to the new account by clicking Start, clicking the arrow next to the padlock icon, clicking Switch User, and selecting the new account icon. When that is complete, use the same method to log back in to your main account, click Start, click the picture icon for your account, and click Manage Another Account. Click the icon for the new account and click Create A Password, using the method described above to password-protect the account.

Finally, check to make sure the computer's workgroup name is the same as that of the Win7 machine. Click Start, right-click Computer, click Properties, and see if the Workgroup entry matches. If not, click Change Settings and enter the correct workgroup name before clicking Apply and OK.

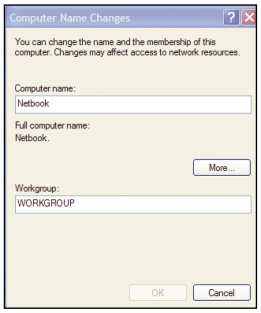
Step 2: Configure Vista For Sharing

If you want to share files on the Vista computer with other computers on the network, you'll need to configure either the entire drive or an individual folder for sharing. To share the entire drive (which is only recommended if you completely trust all users on your network), click Start, click Computer, right-click the icon

To easily share files on the Win7 machine, you need to create a new password-protected user account that is accessible to everyone with which you wish to share.

for the drive you wish to share, and click Properties. Select the Sharing tab, click Advanced Sharing, and check the box next to Share This Folder. Click Apply and then click OK.

To share an individual folder, right-click it, click Properties, and select the Sharing tab. Use the same method we just described (for sharing the hard drive) to share the folder.



Make sure every computer on the network uses the same workgroup name.

Step 3: Access Win7 HomeGroup Content

You can access Win7 libraries from another Win7 PC in the same homegroup, but you can't access Win7 libraries from a Vista or WinXP PC. Instead, you can access all shared content in the traditional way by accessing shared folders. To access the Win7 computer you set up earlier in the article, boot Vista, click Start, click Network, and double-click the icon that corresponds to the Win7 PC. A window pops up asking you to enter the account name (Shared, in our example) and password established earlier, so enter those and check the Remember My Password box if you want to avoid typing that again later. Double-click the Users folder to gain access to all content stored in the Win7 homegroup.

Playing Nice With Macs

If you have a Windows 7 computer and want to share files with a Mac, make sure a password-protected account is set up on the Win7 system and follow these steps.

Step 1: Write Down Settings

Click Start, right-click Computer, and click Properties. Look for the Computer Name entry and write it down. Close that window, click Start, click Control Panel, click Network And Internet, and click Network And Sharing Center. Click the link next to the Connections entry, click Details, and write down the number next to the IPv4 Address setting, making sure to include all the dots, such as 12.12.12.123.

Step 2: Find The Win7 Computer

If you're lucky, the Win7 computer shows up in Finder automatically, and you can simply double-click it and enter the account name and password established in the Win7 section to access the homegroup files. If you don't see the Win7 machine, launch Finder, click Go, and click Connect To Server. If you have OS X 10.2.x, use the drop-down menu to select the Win7 machine and click Connect. If you have OS X 10.3 or higher, click Browse, click the Win7 computer, and click Connect.

If all else fails, in the Server Address box, type **smb://[account name]@[computer name]/users** (without the brackets). For example, with our account name "Shared" and our computer name "Test-PC," we typed the following: **smb://shared@test-pc/users**. Mac OS will ask you for a password, so use the one you created earlier for the shared Win7 account.

Finally, you can try to connect using the IP (Internet Protocol) address you wrote down earlier. In the Server Address box, type **smb://[account name]@[IP Address]/users**. In our example, this would be **smb://shared@12.12.12.123**.

Sharing With Windows XP

Step 1: Check Your Account

In order to share using the method outlined here, you must be logged in to a password-protected user account on the WinXP machine. If your WinXP account doesn't have a password, you can add one by clicking Start, clicking the picture icon for your account, and clicking Home. Click the icon for the account again and click Create A Password. Enter the password you wish to use, type a password hint if you want to, and click Create Password. When asked if you want to make your files and folders private, click No.

Another option is creating a separate password-protected user account that you use only when you want to access shared content. To set up this type of account, click Start, click the icon for your account at the top of the Start menu, and click Home. Click Create A New Account, enter a name, click Next, give the account administrative or limited privileges based on your preferences and who will use it, and click Create Account. When finished, password-protect the account as described earlier.

Also make sure your workgroup name matches that of the rest of the computers on the network. Click Start, right-click My Computer, click Properties, select the Computer Name tab, and see if the Workgroup entry matches. If not, click Change and enter the correct workgroup name before clicking OK.

Step 2: Configure WinXP For Sharing

WinXP lets you select an entire hard drive for sharing or just particular folders. If you want to share with everyone who uses your home network, click Start, click My Computer, right-click the icon for the drive, and click Properties. Select the Sharing tab and check the Share This Folder On The Network box. If you want people to be able to modify shared files and folders, also check the Allow Network

Users To Change My Files box. Click Apply, and the drive is shared.

If you want to share individual folders, right-click the folder, click Properties, and select the Sharing tab. Again, check the Share This Folder On The Network box to share it, and check the Allow Network Users To Change My Files box if you want to allow editing and deleting from other computers on the network. Click Apply and repeat this process for as many folders as you wish.

Step 3: Access Win7 HomeGroup Content

The Win7 machine should be able to see the files shared on the WinXP computer now, but to access the Win7 computer from WinXP, you'll need to use the account credentials established in the Win7 section. Click Start, click My Computer, click My Network Places, and click View Workgroup Computers. Double-click the icon that corresponds to the Win7 computer and enter the account name (Shared, in our example) and password you created when working through the Win7 section of this article. You can now double-click the Users icon to access the contents of the Win7 homegroup.

Step 4: Map The Shared Folder

You can repeat the previous step if you want to access the Win7 homegroup files in the future, but Microsoft recommends mapping the shared Users folder as a network drive to make things easier. To do this, instead of double-clicking the Users icon referenced in the previous step, right-click it and click Map Network Drive. Use the drop-down menu to choose a drive letter that isn't already in use to assign to the shared folder, make sure the Reconnect At Login box is checked, and click Finish. Now, you can click Start, click My Computer, and double-click the icon for the Users drive to access the contents of the homegroup. ❚❚

BY TRACY BAKER

A network storage device, such as the Western Digital My Book World Edition, makes it easy to share files among all types of computers.

Cloud & Network Storage:

Share When You're Not There

An excellent way to share files and folders among many computers and other devices is to use cloud (Internet) storage, network-enabled storage, or a combination of the two. These types of services and devices let you store files in a central location accessible to any computer with an Internet connection (in the case of cloud storage) or any computer attached to the network (in the case of network-enabled storage). The main advantage to this is that no one PC must be on to access all of the shared files.

Cloud Sharing

There are many special-purpose cloud storage services to choose among, including sites such as Flickr (www.flickr.com) for photos and videos, but in most situations, it's nice to use a service that lets you share all types of files, such as SugarSync (free to $39.99 per month; www.sugarsync.com) or Dropbox (free to $19.99 per month; www.dropbox.com). A cloud storage service such as this does many things, but its core function is serving as a folder that exists on the Internet that you can drop any file into to share that file with anyone who has access to your account.

Network Storage

If you don't have a decent Internet connection or want to share large files such as long videos, using NAS (network-attached storage) or some other network-enabled storage product is a terrific solution when you have computers with different operating systems. The procedures for installing this type of hardware vary depending on what you buy. Some connect to an empty router port and require that you install special software on all computers that will access it. Sometimes routers have USB ports designed to accept removable USB hard drives, allowing any computer connected to that router to access the storage. A good example of a network-enabled storage is the Western Digital My Book World Edition ($199.99 and up; www.wdc.com). ❚

Stop By & Chat

SMARTCOMPUTING.COM CHAT ROOMS

Finding the computing answers you need can be an intimidating, sometimes daunting task. But SmartComputing.com provides you with an informal, easy-to-use chat room where you can discuss everything from computer problems to the latest issue of *Smart Computing*. Don't forget to check out the Frequently Asked Questions section and Rules Of The Board. The busiest times for chat rooms usually start around 8 p.m. CST. Getting started is easy; here's how:

1. After logging in, click the Computing Chat Room link on the left side of the home page.
2. Read the Frequently Asked Questions and Rules Of The Board at the top of the page.
3. There are six rooms to choose from; the number beside the room tells you how many people are in the room.
4. Click the numbered chat room link you wish to enter. (NOTE: Chat Room 1 is usually busiest.)

You'll see a list of current chat users on the right, in different colors, and the conversation in the main screen on the left.

1. To change the way messages display, the screen refresh rate, and the font size, click the Chat Preferences link. Select your preferences and click Save.
2. Join the conversation by entering a comment in the Type In Comment box and clicking the Send/Refresh button.
3. When you finish chatting, click Exit Room.

Smart Computing's Daily Fun Fact & Stat

Secure Passwords

According to British Internet security firm Trusteer, 73% of bank customers reuse their online account password to log in to other Web sites, and 47% use their banking ID and password to access additional sites. Using the same ID and/or password for multiple sites is less secure than using a unique combination for each site.

Security & Privacy

As malware becomes ever more prevalent and privacy remains a top priority, learning to protect your PC is vital. Check out the Security & Privacy section at www.smartcomputing.com/techsupport to learn how to get rid of bugs and more.

Tech Support CENTER

Error Annoyances

Is an error message and related problem blocking you from your email, keeping you from using a peripheral, or just popping up to pester you? Get rid of it with help from our Tech Support Center. Click the Error Messages link at www.smartcomputing.com/techsupport and then browse for the error or search for specific text.

Blaise Pascal

On June 19, 1623, Blaise Pascal was born in France. According to the *Smart Computing* Encyclopedia, in addition to fashioning the "first accurate mechanical calculator," Pascal "also invented the wheelbarrow, roulette wheel, and the omnibus."

Quick Studies
How-To

Microsoft Excel 2007

Make Quick Lists With The Fill Tool

Spreadsheet

Beginner

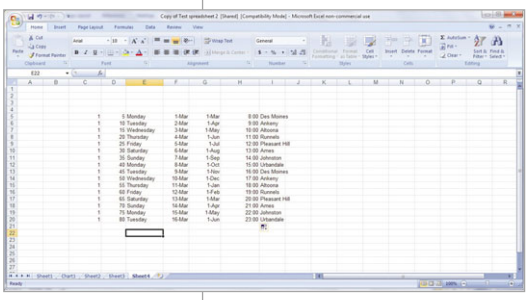
WinXP/Vista/7

It's safe to say that you probably don't realize just how much time Excel can save you. A single tool—the Fill Handle—can instantly handle many types of tedious data entry. Here are a few of our favorite everyday uses for this underused option.

Fill Handle Basics

The Fill Handle lets you create lists with a couple of clicks, whether you want the same number to appear throughout the list or want values to change in a pattern.

Let's say you want to assign numbers to people entered in a contest. Enter 1 in the cell to the left of the first name in the list and then click the box in the bottom-right corner of the cell's border, known as the Fill Handle. Now drag down to highlight all the cells you want to include in the series. (You also can drag across for a list that runs across rows.)



Ready to save yourself some typing? With the Fill Handle, you can instantly create lists like these and more by entering one or two cell values and then dragging across a few cells.

The Fill Handle automatically copies the first cell's value into all the cells in the list. To change how Excel fills the new series, click the small box that pops up at the bottom of your highlighted section. Choose Fill Series to create a simple list such as 1, 2, 3, etc.

You also can use the Fill Handle to create a series to the left or above the original cell. Just remember that Excel sees this as moving backward, so if you choose Fill Series, the numbers will count *down* from the original cell (moving into negative numbers, if necessary) when you've dragged left or up.

More Fill Handle Tricks

Here's another handy use for the Fill Handle: Call on it to quickly copy the same formula into multiple cells. Just highlight the cell containing the formula, then drag the handle across all the cells that will receive the formula. Excel automatically changes the cell references as needed for each cell.

Now, let's assume you need to set up a series in which the numbers increase by an amount other than one (maybe you want the list to count up by two). Just enter the appropriate values into the first two cells so that Excel can recognize the pattern you're using. Then highlight the two original cells and drag the Fill Handle across all the cells you want to be in the series. If you put 2 and 4 in the first two cells, for example, Excel finishes out the series with 6, 8, 10, etc.

Think that's smart? Excel can recognize even more complex patterns. Enter Monday in the first cell, and Excel completes the series with the days of the week. The same works for times of day or dates. You even can count on Excel to interpret and continue original entries such as "Contestant 1" and "Contestant 2."

For even faster work control, use the right mouse button to drag the Fill Handle. This approach lets you choose among several options that Excel will propose for expanding the original entry. If you type "March 1" into the first cell, for example, a standard Fill Handle operation fills the series with March 2, March 3, etc. But if you drag the handle using the right mouse button, you'll get a pop-up list where you can select Fill Months. In that case, the list populates with March 1, April 1, May 1, etc. Be sure to check out the other choices.

Custom Fills

You even can use the Fill Handle to quickly populate lists specific to your business. Let's say you regularly need to insert the names of your 12 branch offices. You can always copy them from an existing workbook, but filling a list is probably quicker. To start, click the Office button and choose Excel Options. Make sure Popular is selected in the left pane, then click the Edit Custom Lists button. In the box labeled List Entries, start creating your list by entering the first office's name, pressing ENTER, typing the next office, etc. When you're done, click Add and OK.

Now, when you're back to working inside your worksheet, you can type the name of the first office on the list and use the Fill Handle to automatically populate the rest of your list.

BY TREVOR MEERS

Quick Studies
How-To

Browsers

Control Cookies In Chrome, Firefox & IE

Cookies

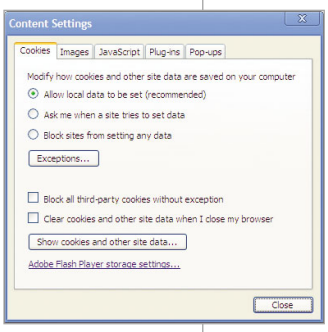
Beginner

Web browser cookies aren't the major privacy problem some make them out to be, but users looking for detailed control over their online information might want to consider the options.

Google recently added to its Chrome browser a set of more comprehensive cookie settings, bringing Chrome in line with Firefox and Internet Explorer. In each of these browsers, you can decide what sites can save cookies and for how long.

The term "cookies" sounds a little more enticing than the cookie files turn out to be. **Cookies** are small text files stored by your browser that contain information related to the Web sites you visit. A cookie might store your name, user ID, or other information that you provided to that Web site in the past. The browser hands the cookie information to the Web site the next time you visit that page, which helps the site personalize your experience.

Cookies generally make life easier on the Web, but not everyone appreciates Web sites "knowing" such details about browsing habits. Set your own comfort level by tinkering with some browser options.



Customizing cookie settings in Google Chrome is fairly straightforward, thanks to some new options.

Google Chrome

In Chrome (www.google.com), click the Tools menu (the wrench icon) and select Options. Click the Under The Hood tab and click Content Settings under Privacy. The tabs on the top of this window lead to different settings.

On the Cookies tab, you have three main choices: allow sites to store cookie data, have Chrome notify you when a site wants to save data, or block all sites from storing cookies. Generally, you'll want to allow sites to set local data.

Third-party cookies are set by sites other than the site you are currently viewing, typically advertisers. Ads you see on Web pages are usually loaded from servers separate from the site you entered. Those servers might set a cookie indicating you saw an ad on site "A." Then, when you visit site "B" that also features the same ad, the advertiser can see that you browsed both sites and might serve a particular version of its ad based on this knowledge. Chrome lets you block all such cookies.

You can choose to block cookies and then add exceptions for particular sites. To create an exception, click the Exceptions button and click Add. In the Host field, enter a domain name (such as amazon.com) and choose Allow, Ask, or Block from the Action drop-down menu.

To see what type of information cookies store, click Show Cookies And Other Site Data. You'll see a list of all cookies stored by Chrome; click a site name and drill down to individual cookies to see their data below. Most of it probably won't make sense, given that many cookies keep information encrypted. The Remove and Remove All buttons at the bottom of the Cookies window allow you to erase individual cookies or the whole cookie jar.

Mozilla Firefox

As in Chrome, cookies are enabled by default in Firefox (www.mozilla.com). To review and change settings, click Tools and choose Options. Click the Privacy tab. In the Firefox Will: drop-down menu, choose Use Custom Settings For History.

You'll see checkboxes to accept cookies from sites, along with an option regarding third-party cookies. You can click the Exceptions button to set up Firefox's behavior on a site-by-site basis, click Show Cookies to see what's been saved so far, and choose whether to delete cookies whenever you close the browser in the drop-down menu next to Keep Until.

Microsoft Internet Explorer

Internet Explorer 8 (www.microsoft.com) handles cookies a bit differently. Click the Tools menu, choose Internet Options, and click the Privacy tab.

In the Privacy tab is a large slider that changes cookie settings. There are six settings altogether, from Accept All Cookies at the bottom to Block All Cookies at the top. In between, you'll find choices such as High and Low. However, the Low setting doesn't necessarily mean you are setting your privacy setting to a really low level; read the descriptions to find a setting that best fits your preferences.

For a simpler approach, click the Advanced button, select the Override Automatic Cookie Handling checkbox, and then choose how you want to handle First-Party Cookies (standard cookies) and Third-Party Cookies by choosing Accept, Prompt, or Block.

BY ALAN PHELPS

Quick Studies
How-To

Online

Find Your Friends With Foursquare & Gowalla

Foursquare

Gowalla

Beginner

As iPhones and other GPS (global positioning system)-enabled mobile devices ride in more pockets and purses, the question that the latest batch of social Web sites ask is not simply what you're doing, but where you're doing it.

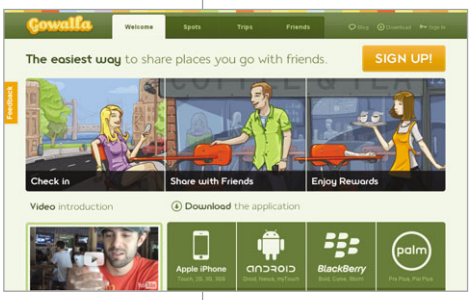
Location-based applications that let friends know when they're near each other in real space are generating buzz and attracting hundreds of users.

Getting the lion's share of the attention are two services in particular—Foursquare (foursquare.com) and Gowalla (gowalla.com)—that turn your daily jaunts into opportunities to bump into pals or meet new people. Both services are free and feature mobile applications that let you easily "check in" to different locations based on your GPS coordinates.

Foursquare

The first thing you'll want to do after signing up for Foursquare is install the mobile version of the app on your iPhone, Android phone, Palm Pre, or BlackBerry.

Next, you'll want to check to see whether any of your friends already use Foursquare. From the Friends page, you can allow Foursquare to check through your Gmail, Twitter, or Facebook contacts. On the mobile version, you can also search by name or phone number, which is more time consuming, but better if you don't want to hand Foursquare temporary access to your other accounts.



Gowalla (pictured here) and Foursquare let you "check in" to venues around town and see if your friends are nearby.

With a few friends lined up, try checking in to some locations. Select the Places button in the mobile app, and Foursquare lists nearby locations based on your GPS coordinates. Select your current location and the Check-In Here button. You can then enter a message if you like and select Check-In Here again. On the next screen, you'll be able to see who else is checked in at the same location.

Foursquare's Tips feature lets you leave messages about a particular location that friends will see when they check in to that same place. For example, maybe you have a favorite menu item at a restaurant where a friend has just checked in using Foursquare.

Foursquare adds a game element to checking in by awarding particular users the mayorship of different venues. The "mayor" of a location is the Foursquare user who has checked in to that place the most times. Anyone else who checks in to that venue sees who the mayor is, and if they visit often enough, they can take the mayor title for themselves. Some venues have caught onto the Foursquare buzz and even offer "mayor specials."

Foursquare users don't check in at home or work. Friends know where to find you at those everyday locations. The fun of the app is running into folks around town or in unexpected places.

Gowalla

Gowalla works much the same as Foursquare. Click the Sign Up button to get started and download the right version of the app for your mobile device (choose apps for iPhone, Android, BlackBerry, and Palm phones).

Unlike Foursquare, Gowalla won't let you check in to a place if you aren't actually there. The places list (called Spots in Gowalla) includes several nearby locations, but you can only check in to the one that matches your GPS reading. If no Spot is listed for your location, select the plus (+) button to name your location and make it available for check-ins.

Gowalla's insistence that your GPS location match your check-in location cuts down on check-in cheating and check-in spam generated by marketers. However, it also means that you occasionally have trouble checking in at a particular place if your GPS is being wonky. Usually, giving your device a little time to fix your position will solve that.

One nice aspect of Gowalla is the ability to easily see other users—even users you don't know—who have checked in at a particular venue. Look up a locale in the Nearby Spots list and then scroll down to see who else visited and when.

Choices

Whether you would have more fun with Foursquare or Gowalla depends on which service your friends are already using or willing to try. If you're just starting out, try each one for a couple of days and see which design you like best and then try to convince the rest of the crowd to join.

BY ALAN PHELPS

Quick Studies
How-To

Microsoft Word 2007

Add Custom Dictionaries

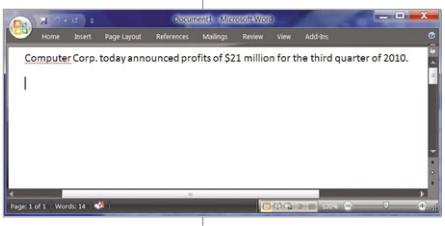
Word Processing

Intermediate

WinXP/Vista/7

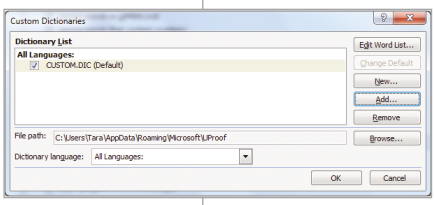
Spell-checking a document filled with industry lingo doesn't have to be a painful process. Creating custom dictionaries from scratch, importing third-party dictionaries, or creating an exclusion dictionary helps you modify the way Word handles spell-checking.

Use the Custom Dictionaries dialog box to create a new custom dictionary. Click the Office button, Word Options, Proofing, and the Custom Dictionaries button to open the dialog box. Click New. You are given the choice of what to name the dictionary and where to save it. You can save the dictionary wherever you like on your PC or stick with the default location. Word 2007 uses these folders by default: for Windows Vista/7, C:\USERS\<*USERNAME*>\APPDATA\ROAMING\MICROSOFT\UPROOF ; for Windows XP, C:\DOCUMENTS AND SETTINGS\<*USERNAME*>\APPLICATION DATA\MICROSOFT\UPROOF.



You can use an exclusion dictionary to flag words that are correct but have an alternate spelling.

Type a name for the dictionary in the File Name box and then click Save. This takes you back to the Custom Dictionaries dialog box. By default, the new custom dictionary is activated. Activated dictionaries have a check mark next to them. If you have a dictionary that you need only for particular documents, you can go to this dialog box and activate it or turn it off as needed.



New custom dictionaries are created using the Create Custom Dictionaries dialog box.

You can manually add a word to your new custom dictionary by highlighting the dictionary name and then clicking Edit Word List. If you want to add many words at a time, you can browse to the dictionary on your hard drive and open the file in Notepad.

When you right-click a word in a document and choose Add To Dictionary, the word goes to the current default custom dictionary. CUSTOM.DIC is best for general use. If you want to add a word to a different dictionary when you choose the Add To Dictionary option, you can change the default in the Custom Dictionaries dialog box. Select the dictionary you want to use and then click the Change Default button.

Specialized Dictionaries

There are many custom dictionaries available for particular uses and professions, such as medical and legal. These are easy to add to Word 2007. Simply save the dictionary file to one of the folders named earlier in this article. The dictionary file needs to have a .DIC extension. Next, go back to the Custom Dictionaries dialog box. Click the Add button and browse to the new dictionary file. Select it and click Open.

Older dictionary files, or those used for other word processors, may be encoded using the ANSI character set. If so, you will get this error when you try to add it: Files without Unicode encoding can't be added to the dictionary list. Save the file as a Unicode file to add it to the dictionary list. Unicode allows for a greater number of characters to be represented than ANSI does. This means that the many thousands of characters in languages that don't use the English alphabet can be displayed.

Word 2007 requires dictionary files to be formatted in a particular type of Unicode called "little endian." You can change an ANSI file to this format by opening the file in Notepad and then clicking Save As and choosing Unicode from the drop-down list at the bottom of the window. Do not use Unicode Big Endian or UTF-8. Save the file and then use the Add process described previously.

Create An Exclusion Dictionary

An exclusion dictionary lets you flag certain words as incorrect that are actually in the main dictionary. This comes in handy when you use special spellings of words. For example, if you worked at a company named Komputer Co., and people in your office tend to mistakenly type Computer Co., you can have the spell-checker flag the word "computer" as incorrect when it appears.

Exclusion dictionaries are created when Word 2007 is installed. The default exclusion file for U.S. English is ExcludeDictionaryEN0409.lex. It's in the same folder as custom dictionaries. Also like custom dictionaries, they can be edited with a program such as Notepad. However, exclusion dictionaries aren't added to Word through the Custom Dictionaries dialog box. They go to work automatically.

BY TOM HANCOCK

Roxio Creator 2010

Troubleshoot Copy & Convert

Digital Media Suite

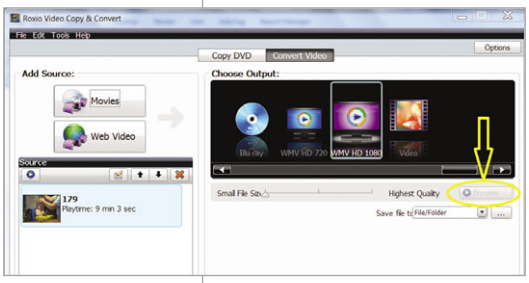
Intermediate

WinXP/Vista/7

Video Copy & Convert is an extremely useful tool in Roxio Creator 2010, but occasionally it doesn't function as we expect it to. Here are a few issues you might run into and some suggestions for troubleshooting them.

Problem: I'm trying to capture video from the Web and convert it for playback on my phone (DVD player, Blu-ray Disc player, etc.), but the video won't load into the Creator window.

Solution: There are a variety of possible causes here. Creator works with Adobe Flash videos with formats H.263 or H.264. These formats are commonly used on sites such as YouTube and Google Videos, but if the video is in a different format, Creator won't be able to recognize it. Another possibility is that the video you're trying to capture is a thumbnail rather than a full clip. In this situation, click the thumbnail to launch the video in its own window and then use the Web video conversion tool.



If you can't preview a clip with Video Copy & Convert, it's possible your computer's display resolution is set too low for the chosen output.

A third reason you may not see the video load into Creator can be remedied with a little patience. Creator tends to take awhile to load extremely long video clips or Web video the first time you use Video Copy & Convert. Lastly, the video may have been copy-protected by the person who uploaded it to the Web site, and without permission, you will not be able to download it.

Problem: The Preview button is grayed out.

Solution: Video Copy & Convert gives you the option of converting video to a variety of formats, including several HD (high-definition) outputs such as Blu-ray, WMV HD 720, and WMV HD 1080. For HD outputs, your computer monitor needs to have a sufficiently high enough resolution for you to be able to view the converted clip. If your monitor is configured to a resolution lower than the output format's threshold, you won't be able to preview the clip on your computer.

One potential fix is to make sure your display is set to its highest possible resolution. In Windows 7, right-click a blank part of the Desktop and select Screen Resolution from the Context menu. In the Resolution drop-down menu, move the slider bar to the highest possible setting. Click Apply and OK. (In Windows Vista, right-click a blank part of the Desktop, select Personalize, and click Display Settings. In Windows XP, right-click the Desktop, select Properties, and click the Appearance tab.) Return to the Video Copy & Convert window. If this does not fix the problem, your computer display does not have the ability to let you preview the converted clip. Keep in mind you will still be able to convert the clip and watch it on another device, though.

Problem: The software says I can use it to copy a DVD, but the Go button doesn't work.

Solution: Use the Copy DVD window to copy the DVD to a temporary location on your hard drive, and then you can copy that file from the hard drive onto a blank disc. This only works, however, if you have permission to copy the DVD. Most commercial DVDs are copyright-protected, and Creator will not allow you to copy them. If the Go button is grayed out, look in the lower-left corner of the Creator window. If you see the words "Protected Disc," this means the DVD is copyright-protected.

Problem: I made a DVD and want to convert it so I can post it on YouTube, but the program keeps crashing.

Solution: Even if you have a nonprotected DVD, you may run into conversion trouble. The good news (sort of) is that you aren't doing anything wrong. The bad news is that this is a known issue in Creator 2010. We ran into this situation when we tried to take a homemade DVD and convert it to MP3 format. We chose the Video output and clicked Preview. The Video Copy & Convert dialog box opened and displayed a progress bar, but the progress stayed at 0%. The following error message then appeared:

"Roxio VideoConvert has stopped working. A problem caused the program to stop working correctly. Windows will close the program and notify you if a solution is available." The Roxio team says this is a known bug that the developers are fixing for the next release of Creator.

BY HEIDI V. ANDERSON

Quick Studies
How-To

Microsoft PowerPoint 2007

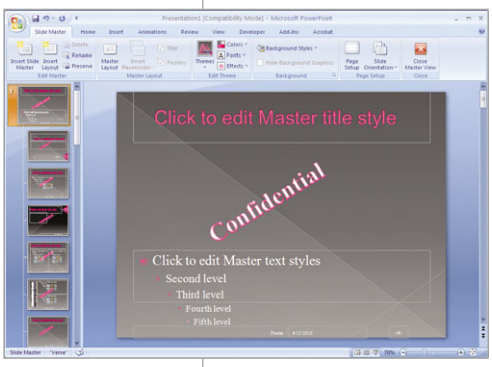
Add Background Colors & Images

Presentation
Advanced
WinXP/Vista/7

Slide backgrounds play a role far bigger than their name implies. Well-chosen background colors make your text and images pop off the screen. Adding a graphic or words as a subtle background image constantly reinforces the theme or branding of your presentation. This month, we look at how to adjust the color and add images or text under your slide's more obvious components.

Change Background Colors

If your presentation uses one of PowerPoint's standard design themes, changing background colors can be confusing. You can click all over Ribbon tools for things such as Layout, Colors, and Background Styles without finding tools that let you simply change the slide's main background color.



Want a watermark like this "Confidential" stamp to appear in the background of each slide? Add it through a text box or Word Art on the Slide Master.

Here's how it's done. If your slide theme includes both a built-in color and graphic (the Verve theme, for example, includes an angular graphic), you can turn off the graphic and see just the color if you'd like. To get this simpler look, go to the Design tab and checkmark the Hide Background Graphics box. To turn off the graphic on multiple slides, hold the CTRL button down while you click to select multiple slides. Then checkmark the Hide Background Graphics box.

If you like your theme's general design but not its colors, you have a couple of quick ways to adjust them. On the Design tab, click Colors to see a big selection of color packages. Clicking one changes the colors throughout the slide, including the background and various fonts.

If you want to change only the background color, click the Design tab's Background Styles button and choose a new option. For detailed control over the background color, click the Background Styles button and choose Format Background. This produces a dialog box where you can adjust options such as whether the color is solid or a gradient fade, which direction it fades in, and the color's transparency. If you click Close in this box, changes apply only to the selected slide. To make the change throughout the presentation, click Apply To All.

Add A Picture Background

The Format Background box is also the place to set up a photo as your slide background. In the box, choose the Picture Or Texture Fill radio button, then click Insert From File to use one of your images here. Keep in mind that you can use any type of image file here, not just photos. Corporate logos, for example, work well in this setting.

With the image inserted, it's time to adjust it to work with the content on top of it. The tools for this job are in the Format Background dialog box. On the Fill pane, you can choose to tile the image or adjust its transparency. For many images, it's a good idea to dial up the transparency so the image doesn't overpower the slide. Use the Picture pane to apply various color options to the image and adjust its brightness and contrast.

To treat an image as a watermark that appears on every slide in the presentation, the process is essentially the same. But you should add the photo and adjust it on the Slide Master, which controls the appearance of all slides. On the View tab, click Slide Master. Use the Insert tab's Picture button to add a photo, then drag it to the proper position and use the photo adjustment tools on the Picture Tools/Format tab to give it the proper look. If you're working with a theme, you may need to add the watermark to more than one page layout on the Slide Master (you'll see the different layouts on the left) to make it appear on all slides in a presentation. Save your changes by going to the Slide Master tab and clicking Close Master View.

Use Words As A Background

Using basically the same procedure outlined above, you can add words as watermarks, too. You might use this to label a presentation with unmistakable stamps, such as "DRAFT."

Open the Slide Master and insert the text you want through a text box or a piece of Word Art. If your watermark item covers up too much, move it to the background of the slide. Click the watermark item and, on the Format tab, click Send To Back.

BY TREVOR MEERS

Compiled by Marty Sems
Graphics & Design by Lori Garris

CDs & DVDs

"Burn it to disc," they tell you, and they expect you to understand what they mean.

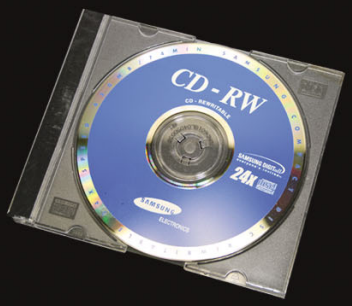
You're fairly sure that you need to write some photos, video, music, or other data to a CD or a DVD. Of course, there's the vexatious question of which type of CD or DVD to use.

No worries. Here's a crash course in popular optical discs, complete with pictures. We're leaving out the expensive BD-R (Blu-ray Disc-recordable; 25GB or 50GB) and BD-RE (BD-rewriteable; 25GB or 50GB) formats for now, but we'll revisit them later if they catch on in the marketplace.

CD-R

The "R" in this 700MB CD's name stands for "recordable." It's a medium you can write only once, although you can burn other sets of files to a CD-R later if the disc isn't full or **finalized** (prepared for playback in a CD player or other device).

CD-Rs are broadly compatible with a huge range of computers and electronics, depending on their data content. Like most DVDs, they're about 4.75 inches in diameter. Also like certain DVDs, some CDs have white or silver label sides that are printable by inkjet or thermal printers.



CD-RW

This 650MB or 700MB type of CD is rewriteable, meaning that you can erase it and burn new data to it. In comparison with CD-R, however, CD-RW isn't supported by nearly as many noncomputer devices.

DVD+R, DVD-R

Able to hold 4.7GB, these recordable discs are widely used to store backups and home movies. Like CD-R, they're write-once but are able to hold multiple data sessions. They're also compatible with virtually all devices that have DVD support.

DVD+R DL

This recordable format, marketed as "dual-layer" or "double-layer," has nearly twice the capacity of DVD+R (8.5GB) and enjoys most of the lesser disc's device support. DVD-R DL discs are relatively rare but still available at this writing.

DVD+RW, DVD-RW

These rewriteable versions of DVD±R store 4.7GB. DVD+RW and DVD-RW (to a lesser extent) are generally compatible with non-PC gadgets such as DVD players and recorders as well as computers.

Mini DVD

These 3-inch DVD±Rs and DVD±RWs are downsized for use in DVD camcorders. They typically store 1.4GB per side. Most consumer electronics that use DVDs also support Mini DVDs, except for those with vertical disc trays or slot-loading mechanisms.

LightScribe

A LightScribe CD or DVD has a special compound on its label side. A compatible drive can slowly burn graphics and text labels on a LightScribe disc using the same laser it uses to write data on the other side (you need to flip the disc between these operations). This monochrome medium is available in six colors. A rival direct disc labeling technology, LabelFlash, is similar to LightScribe but less common.

DVD-RAM

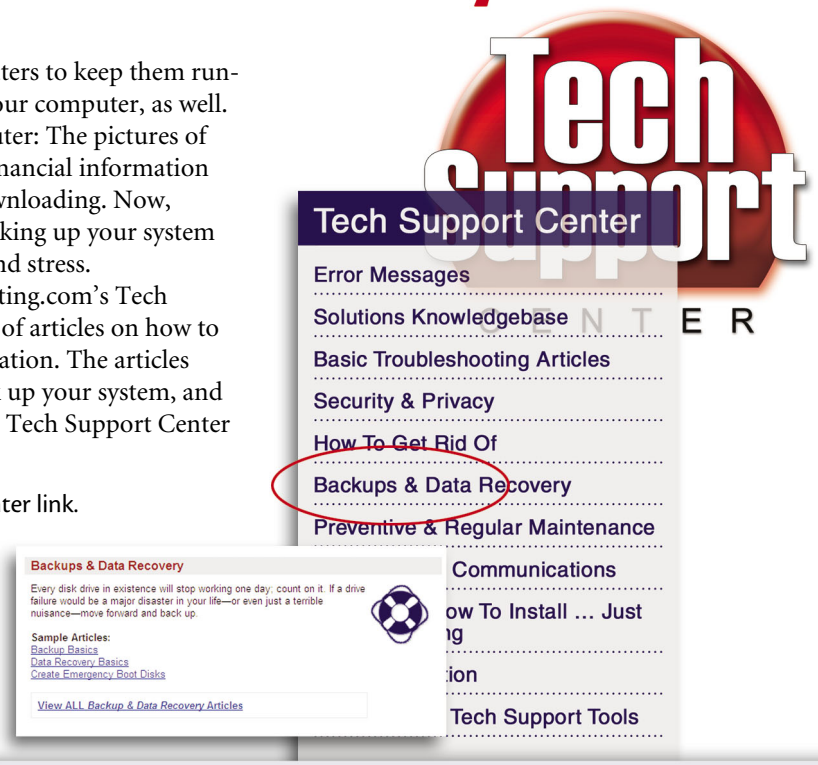
This somewhat ancient rewriteable format predated DVD±RW. It evolved from a cartridge to a bare disc form factor. Thanks to error correction technologies and data sector boundaries manufactured into each disc, DVD-RAM is a suitable format for random-access applications such as video editing. It can store 4.7GB per side.

Backups & Data Recovery

We all know how important it is to clean out our computers to keep them running smoothly. But it's just as important to back up your computer, as well. Think about all of the important information on your computer: The pictures of your grandson's baseball game. Your tax records and other financial information from the past five years. All of the music you spent hours downloading. Now, imagine all of that information disappearing. Scary, huh? Backing up your system can prevent future problems and will save you a lot of time and stress.

Find all the backup information you need at SmartComputing.com's Tech Support Center. The Backups & Data Recovery section is full of articles on how to back up your system and how to recover valuable lost information. The articles cover basic computing language, the tools you'll need to back up your system, and how to avoid losing data. Check out these great articles in the Tech Support Center at SmartComputing.com today!

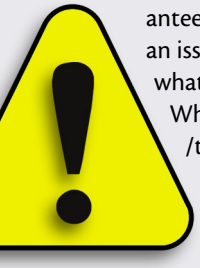
1. Go to SmartComputing.com and click the Tech Support Center link.
2. Click the Backups & Data Recovery link.
3. Search articles to find all the backup information you need. Subscribers, be sure to log in so you can add the articles to your Personal Library.



Konrad Zuse

Born on June 22, 1910, in Germany, Konrad Zuse was a computing pioneer. According to the *Smart Computing* Encyclopedia, Zuse's creation, "the Z2, completed in 1940, is regarded as the first fully functioning electro-mechanical computer in the world."

What To Do When



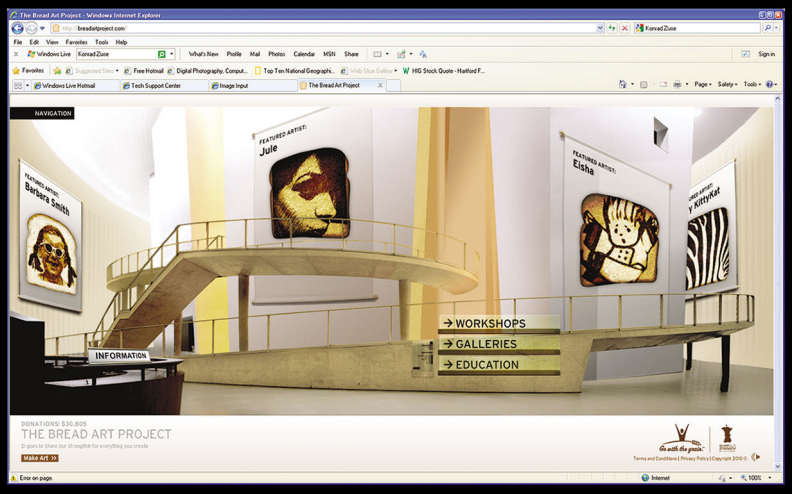
If you own a computer, one thing is all but guaranteed: At some point, you'll face a minor glitch, an issue, or a catastrophe. If you're wondering what to do next, check out our "What To Do When" articles at www.smartcomputing.com/techsupport. You'll find answers to common conundrums such as what to do when a program won't start, you can't uninstall a program, or you drop your notebook.

News To You

Keep up with the latest happenings in the wild world of computing by checking the Smart Computing.com Web log. You'll find links to the latest (and sometimes weirdest) technology news.

Smart Computing's Fun Site Of The Day: The Bread Art Project

This site (breadartproject.com) features works of art created with virtual slices of bread. In addition to being fun to browse and experiment with, this project also has a philanthropic angle. For each piece of bread-art that's uploaded, the site will donate $1 to Share Our Strength, an organization that aims to end childhood hunger in the United States.



What To Do When Your HDTV Has Terrible Picture Quality

The HDTV (high-definition television) that you see in the electronics store is factory-calibrated as a display model, so the picture can certainly surprise you when you use it for the first time in your home theater. However, that doesn't mean you have to watch a perpetually underperforming HDTV. Although your HDTV won't magically produce a high-definition picture when you plug it in, there are steps you can take to ensure that your HDTV will display the best picture possible. We'll expose some of the reasons why your HDTV isn't providing a stunningly brilliant picture and offer some solutions that might help.

What's The Problem?

When you push the Power button on your HDTV, ask yourself if the picture you're watching is exactly what you want to see. Is the contrast uneven? Is the color too saturated? What about the sharpness? This moment can be completely underwhelming. Before you vow to repack your HDTV and demand a refund, understand that an HDTV won't even begin to look dazzling until you calibrate the TV set to produce the right picture for your home. Moreover, you'll need to match HD-compatible components and programming to your new HDTV.

The Spyder3TV Color Calibration kit from Datacolor walks you through the appropriate steps for fine-tuning your HDTV's display. Hardware requirements include a DVD player, a TV and DVD remote control, and a PC with one USB port and Windows XP or Windows Vista.

HD service. HD programming service is available via one of three sources: antenna (with an HDTV tuner), an HD satellite box, or an HD set-top cable box. If your programming is periodically "pixelated" (the pixels look abnormally large), your video signal may be intermittently dropping in and out. If you rely on over-the-air signals for HD programming and are in either a rural area or a spot that's densely populated with natural barriers, an outdoor antenna could be the most appropriate choice for maintaining a consistent signal. On the other hand, if you receive cable or satellite programming, feel free to call your provider to have it check the connection.

HD vs. SD programming. TV programming was upgraded from analog to digital, but this doesn't mean that it's high definition. The most basic cable and satellite programming packages typically include SD (standard-definition) channels, and extended packages will likely include some HD channels. However, to receive the full lineup of HD channels, you must request the complete HD package from your service provider; otherwise, you may end up watching SD channels on your HDTV. Because SD programming isn't intended for HDTVs, you might encounter muted images, unnatural hues, and decreased sharpness.

HDMI cables. Using the right cables is critical to displaying images on your HDTV in full high definition. Standard HDMI (High-Definition Multimedia Interface) cables are compatible with HDTVs that support 1080i or 720p resolutions. If you're using component, S-Video (Separate-Video), or composite cables to connect components to your HDTV, you won't get the quality video that an HDMI connection will provide.

HDTV peripherals. Another reason you may not be getting the most out of your HDTV is because you haven't upgraded your peripherals—this includes your DVD player from 2001. Blu-ray Disc players have replaced DVD players as the primary disc-playing devices compatible with HDTVs. You can still purchase an upconverting DVD player that will upscale the resolution of a DVD to closely match the resolution of an HDTV, but Blu-ray is the most advanced digital playback technology currently on the market. If you connect other HD-compatible devices, such as game consoles, media extenders, or a media center PC, be sure to invest in high-quality cables, so your screen doesn't "sparkle" (when your cable is faulty or improperly connected) or drop out (portions of the display disappear) due to inadequate bandwidth or cable construction.

Time To Calibrate

All of the aforementioned issues are secondary to HDTV calibration, because without proper video optimization, you won't be able to get to the root of your video-related problems. Calibrating an HDTV involves advanced tweaking of HDTV video settings, performed by you or a professional calibration service, to produce the picture and performance quality you're supposed to see and not simply what was on display at the electronics store. Because professional calibration technicians will most likely save you time and energy, we recommend that you choose an ISF (Imaging Science Foundation)-certified service to complete all the calibration steps.

Hiring an ISF professional (or service) costs between $300 and $500 on average. You can expect a full calibration to last approximately two hours. For example, the Best Buy Geek Squad (www.bestbuy.com) offers specialized HDTV calibration services for $299.99, and it is trained to use specially designed equipment to access the advanced settings on your HDTV. Calibration professionals utilize a color analyzation device to adjust the color temperature and saturation to create a true-to-the-original-production image.

Professionals will focus on improving the contrast to generate the brightest whites and darkest darks. On top of this, they will optimize your video and audio inputs, so you can be confident that any HD-compatible hardware you connect will deliver crisp video and audio. Best Buy's Geek Squad will also review and suggest helpful features on your remote control that could make your HDTV experience more enjoyable. This type of extra assistance may not be part of other calibration service packages, but you can do your homework to compare the offerings of each service provider to see for yourself.

You Can DIY

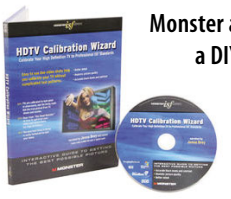
If you decide that you'd rather tackle calibration on your own, be sure to take note of the important preliminary procedures. Turn off the default settings on your HDTV, such as black levels, white balance, contrast, etc., located in the on-screen settings (refer to your users manual if necessary). Check to see if your HDTV features a custom or user preference mode, so that the HDTV can remember the new calibrated settings. Also, adjust the lighting conditions in your home entertainment room (or wherever you're displaying your HDTV) to match how you will typically watch your HDTV.

Some HDTVs include built-in color contrast settings, such as the Sony BRAVIA 40-inch EX400 Series HDTV ($679.99; www.sony.com), which features an Advanced Contrast Enhancer to process the darks and lights in the display.

Concerning the how-to steps, there are generally two calibration methods you can perform: Purchase and use the same equipment as calibration professionals or rely on a calibration DVD.

The tech-savvy home-theater enthusiast may prefer the first option, knowing that it provides the most control over the calibration process. For instance, the Datacolor Spyder3TV Home Theater Color Calibration kit ($99; spyder.datacolor.com) will not only calibrate LCD and Plasma HDTVs, but also RPTVs (rear-projection televisions), DLP (digital light processing) TVs, CRT (cathode ray tube) TVs, and front projectors. The Spyder3TV claims to reduce energy consumption by properly tuning the brightness and contrast on the display. It features an assistant-based interface that gives you step-by-step instructions on how to adjust the color settings.

If you prefer to use a less expensive calibration DVD, look for software with an ISF-approved logo. Or, better yet, use the ISF-designed program, the ISF HDTV Calibration Wizard ($29.95; www.imagingscience.com), which walks you through HDTV optimization using step-based instructions. Because it allows you to make adjustments at every stage of the calibration process, you can optimize video settings according to your preference.



Monster and ISF collaborated to produce a DIY HDTV Calibration Wizard DVD that optimizes contrast, brightness, color accuracy, and other vital settings.

See The Results

There's no need to panic if your HDTV has objectionable picture quality. Your HDTV likely isn't defective, but instead, it probably needs to be appropriately calibrated for your home entertainment environment. (In rare cases, some HDTVs are duds.) Although you can choose to purchase HDTV optimization equipment or a DVD that walks you through the process, the most efficient option is to hire an ISF-certified calibration professional. This way, you can see the high-definition picture as the movie producer intended you to see it, hear correct sound levels, and ultimately save energy. To be sure, a good calibration job will make your HDTV last as long as possible. ▮▮

BY JOANNA SAFFORD

How To Fix Common Problems With Digital Cameras

Think of all the memories you've captured with your digital camera—moments that are forever preserved because you were there with your camera in hand. Whether your digital camera is a pocket-sized point-and-shoot or a larger D-SLR (digital single-lens reflex), you count on it to work properly when the perfect shot comes into frame. Unfortunately, this isn't always the case. Errors occur and accidents happen, but you don't have to be without your digital camera for long. We'll show you some possible solutions for a few of the most common digital camera problems you may encounter.

Try Firmware First

Oftentimes, digital camera problems can be corrected by applying firmware updates. Firmware is the software embedded in your digital camera that tells it how to perform each of its functions. Like the OS (operating system) on your computer, your digital camera's firmware should be updated occasionally to ensure the best performance. Updating your camera's firmware typically involves connecting it to your computer via a USB or other cable that came with the camera and then downloading the update directly to the camera.

Finding firmware updates for your digital camera is relatively simple. Most camera manufacturers have support pages on their Web sites where you can find updates and downloads for each camera model. Other manufacturers' sites include updates and downloads directly on each product page, so all you have to do is navigate to your camera's Web page and click an Updates, Downloads, or Support link.

The users manual that came with your digital camera should also offer directions for navigating to the manufacturer's support and update pages, and it will often include step-by-step instructions for applying updates to your camera.

Problem: My digital camera won't turn on.
Solution: It may seem quite obvious, but if your digital camera doesn't power on, try pressing the Power button again to make sure a proper connection was made. You may even try holding the Power button down for several seconds. If your digital camera still doesn't turn on, next check to make sure the batteries are inserted correctly. Most cameras have a small diagram drawn in the battery compartment showing you the polarity of each battery chamber and which way you should insert your batteries.

If the batteries are inserted correctly, perhaps they aren't fully charged. Digital cameras require a lot from batteries, and batteries with a low charge may not have enough power to even turn on the camera. If you have rechargeable batteries, place them in their charger. When they are fully charged, try putting them in the camera once more and turning it on again. If you have regular alkaline batteries that aren't fully charged, they may not be powerful enough to power your digital camera. You can try using alkaline batteries that you know are fully charged to determine whether the first pair wasn't fully charged, but your best bet is to use rechargeable batteries.

Other possible solutions include cleaning your camera's battery terminals with a soft cloth. Your camera's battery terminals may have debris, such as oil from your hands, preventing

Most digital cameras have a diagram in the battery compartment, making it easy to ensure your batteries are inserted correctly.

proper contact. In addition, some cameras may not power on if the memory card slot is open.

Problem: My computer won't recognize my digital camera when it's connected.
Solution: Windows should automatically recognize your digital camera and prompt you with a list of possible actions, such as viewing the pictures stored on your memory card. Sometimes, this recognition takes several minutes, especially if you're plugging in the device for the first time. If, after waiting a reasonable amount of time, you are not prompted with actions for your digital camera, ensure that your camera's batteries are charged and that your camera is turned on, as many models require the camera to be powered in order for the computer to access its contents. If these things check out, try plugging your camera into a different USB port. Next, go to the Start menu and click My Computer (in Windows XP) or Computer (in Windows Vista and Windows 7) and then see if your device is listed under the Devices With Removable Storage section. If it is, double-click your camera's icon to interact with it. If not, try the following suggestions.

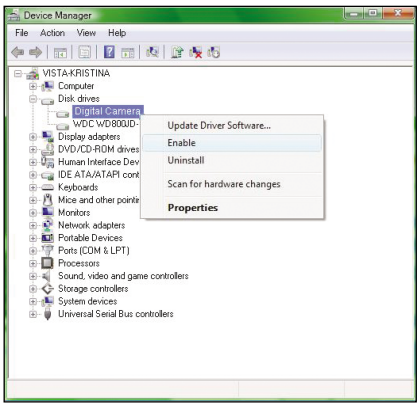
It could be that in order to use your digital camera with your computer, you must first install the software that came with your camera. If you can't locate the software disc that came with your digital camera, you may be able to download the software from the manufacturer's Web site.

If none of the above solutions solves the problem, you may need to enable your camera in the Device Manager. In Windows XP, click the Start menu and choose Control Panel. Click Performance And Maintenance, click System, and choose Device Manager under the Hardware tab. In Vista and Win7, click Start and choose Computer. Click System Properties at the top and then choose Device Manager from the left menu. Locate and expand the Disk Drives entry, right-click your camera's name, and choose Enable. Once enabled, your camera should be recognized and listed in My Computer. If your camera is still not recognized, we suggest you contact your camera's manufacturer for additional suggestions.

Problem: I accidentally dropped my digital camera in water.
Solution: The most important thing to remember if your digital camera should be partially or fully submerged in water is to act quickly. Once your camera is out of the water, avoid the urge to turn the camera on to see if it works and instead remove the batteries immediately to prevent shorting any of the internal electrical components. Remove your memory card also, otherwise you may lose the pictures you've already taken and saved to the card.

Leaving the battery and memory card compartments open, dab away any excess water with a dry cloth or paper towel. Then, use a household hairdryer set to the lowest heat or no-heat setting and blow dry the camera for 10 to 15 minutes.

Although the outside of the camera may be dry, it's what's on the inside that counts. If any moisture is left



If your computer doesn't recognize your camera when it's connected, you can try enabling your camera in the Device Manager.

If you accidentally drop your camera in water, you can help dry it out by placing it in a bowl of uncooked rice.

within the camera, it may, over time, grow mold, which can interfere with the camera's operation. If the camera was dropped into a chlorinated swimming pool or a saltwater lake, your camera's components may suffer corrosion over time, and your camera will eventually stop working.

To help draw moisture out of the camera, pack your camera in a bowl filled with silica gel (the packets of small transparent beads often found in various foods, electronics, and clothing packages) or uncooked rice. Both materials can absorb and hold excess water that may be left in your camera. Leave your camera to dry for at least 24 to 48 hours. Once you are certain that your camera has completely dried out, insert fully charged batteries and press the Power button. With any luck, your camera will function properly. If not, you may try contacting a camera repair company to ask advice or inquire about repair options.

Problem: The batteries in my digital camera don't last very long.
Solution: As digital cameras become more advanced and include more features, the power needed to keep them functioning has also increased. That means that typical alkaline batteries likely won't do more than power your camera for a few shots before running out of juice. Sometimes, your digital camera may not power on at all if the inserted alkaline batteries aren't fully charged or powerful enough. Rather than carry along dozens of alkaline batteries for a single photo shoot, you can save money by purchasing rechargeable NiMH (nickel-metal hydride) batteries. Rechargeable batteries can be purchased with a charger that you plug into a wall outlet, and they fully charge in one to five hours depending on the charger and the type of batteries you're using.

You can buy rechargeable batteries with a charger that plugs into any wall outlet.

If you're already using rechargeable batteries but are experiencing short battery life with your digital camera, it's likely time to replace your rechargeable batteries with new ones. Depending on the number of charging cycles you perform (how many times you discharge and recharge your batteries), rechargeable batteries typically last for two to three years before they no longer hold a full charge. You may also ensure that you're charging your rechargeable batteries directly before use. As batteries sit unused for extended periods of time, they automatically lose some of their charge.

There are many ways you can conserve battery life while using your digital camera, too. For starters, if your camera has a viewfinder in addition to an LCD, use the viewfinder to frame your shots and turn the LCD off because LCDs draw a lot of power. If you prefer to use the LCD, you can still conserve battery life if you refrain from looking at each picture on the screen after you take it.

Problem: I lost my camera's users manual.
Solution: If you've had your digital camera for some time, finding the users manual that came with it can be nearly impossible. Luckily, most digital camera manufacturers make each of their models' users manuals available on their Web sites under the Support or Download sections. Manuals are usually available as PDF (Portable Document Format) files that you can print out or save to your hard drive. We've outlined how to find online manuals for several digital camera manufacturers.

Canon. Navigate to www.usa.canon.com. On the main page, select Downloads and choose Consumer. In the first field, select Digital Cameras or EOS (SLR) Camera Systems if you have a D-SLR. Next, choose the series of your camera, select the model, and click Go. When the camera's product page appears, select the Drivers & Downloads tab and then scroll down to the Guides And Manuals section.

Kodak. Point your browser to www.kodak.com and click Help Center at the top of the page. In the Start Here section, choose Digital Cameras, then your camera's type and model, and click Go. On the left side of the product page, click Manual. Use the links to view an online version of your camera's users manual.

Nikon. Nikon doesn't offer its manuals online, but you can still request one by mail. Go to www.nikon.com and click Products & Support at the top of the main page. Choose Imaging Products and select Support on the right. Scroll down to Instruction Manuals and click the FAQ link. Here, you are given information for where to send your request for an instruction manual and what information to include.

Olympus. Point your browser to www.olympusamerica.com, choose Products & Solutions, and select Consumer. Click Product Support under the Support Center section and choose Digital Cameras. Select your camera's series and model and then scroll down to Instruction Manuals & Brochures.

What's Next?

If the solutions we've offered don't fix the problem you're having with your digital camera, or you have other questions, we suggest you visit your camera manufacturer's Web site and browse the support forum or FAQ section for additional answers or suggestions. ■

BY KRIS GLASER BRAMBILA

Examining Errors

COMPILED BY THE *SMART COMPUTING* STAFF

Error messages rarely provide clear explanations of the problems they represent. Some are riddled with technical jargon. Others have seemingly indecipherable codes. And some tell you exactly what the problem is but don't tell you how to solve it.

Each month, we take the mystery out of error messages that flummox our readers. Every solution includes the message in its original form, a plain-English translation of that message, and step-by-step instructions for solving the problem.

If you have questions about an error message, email us (errormessages@smartcomputing.com), and we'll try to decipher it. Tell us what version of Windows you are using, give the full text of the error message, and provide as many details in your email as possible. Volume prohibits individual replies.

MICROSOFT SECURITY ESSENTIALS

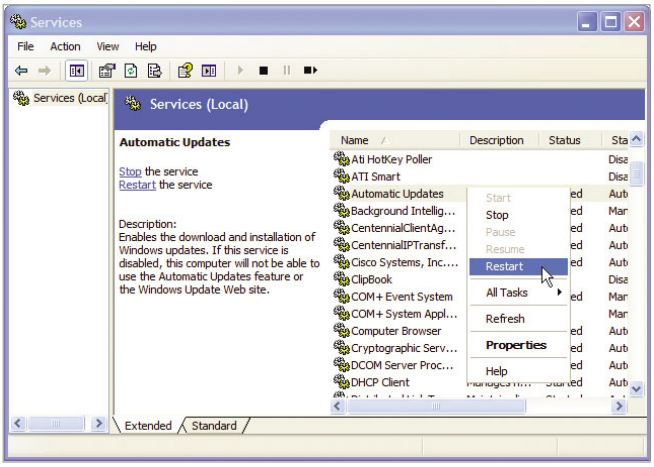
Error

0x8*******

Translation: This error message may appear if your computer runs Microsoft Security Essentials. The message appears when Security Essentials is updating. It means that the MU (Microsoft Update) service, which is responsible for transferring malware definitions and patches to your computer from Microsoft's servers, is experiencing a problem. Your error message may contain more text than 0x8******* ("*" represents a character).

Solution: According to Microsoft, the top method for solving this problem is to restart the MU service. To do that in Windows XP, click the Start button and then click Run. Type **services.msc** in the Open field and then click the OK button. In Windows Vista and Windows 7, click Start, type **services.msc** in the Search field, and press ENTER.

In the Services window, scroll to Automatic Updates (Windows Update in Vista and Win7) and then right-click



it. When the context menu appears, click Start. (Or, if Start is grayed out, click Restart.) Close the Services window, open Security Essentials, and let it update again. It should now update without experiencing any problems. To read Microsoft's troubleshooting tips for this problem, visit tinyurl.com/y5rt5xc.

GOOGLE

Error

We're sorry but your computer or network may be sending automated queries. To protect our users, we can't process your request right now.

Translation: This error message may appear when you enter a search term in Google's search engine (www.google.com). It may mean that your computer (or a computer on your network) is infected with malware that is causing the computer to send too many queries to Google. If your computer sends enough queries, Google blocks your searches.

Solution: Google provides a short-term workaround that will let you complete this search. The error message page includes a CAPTCHA phrase, which is an image of a series of characters. Type the CAPTCHA characters into the page's input field and click the I'm Human button to let Google know that you are not running a malicious search. Google will let you continue your search. You can also use a different search engine, such as Microsoft Bing (www.bing.com) until the situation is resolved.

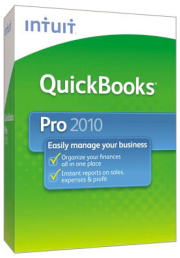
That said, you should run your security software's virus scan on your computer (and any other computers on your network) as soon as possible. If you see this error message repeatedly, call your ISP (Internet service provider) to determine whether the problem is with your home network or is something that the ISP is experiencing. For more information, visit Google's troubleshooting tips at tinyurl.com/dbnd8q.

INTUIT QUICKBOOKS

Error

QuickBooks is unable to send your email to Outlook. Close any open Outlook windows and try again.

Translation: You may encounter this error message if you are running QuickBooks Pro on a WinXP, Vista, or Win7 computer. Your computer also has Outlook, which is part of Microsoft Office. You are trying to email a transaction from QuickBooks. The message probably means an incorrect setting is preventing QuickBooks from sending emails through Outlook.



Solution: As the error message suggests, you should kick things off by restarting Outlook. If that doesn't solve the problem, restart Windows. If neither of these restarts does the trick, you'll need to try more complicated troubleshooting steps. Intuit recommends changing certain settings in QuickBooks and making sure that QuickBooks isn't running in Compatibility Mode.

Check email settings. In QuickBooks, click Edit and then click Preferences. Select Send Forms. On the My Preferences tab, find Send E-mail Using and choose a target program. Click OK, shut down QuickBooks, and then restart Windows. You shouldn't encounter the error message again when you try to email via QuickBooks.

If that doesn't work, start QuickBooks and return to the My Preferences tab in Send Forms. Choose QuickBooks E-mail, click OK, and then return to the preferences and select Outlook and click OK. This may help QuickBooks send the email through Outlook. Send an email from QuickBooks to see if this solved the problem.

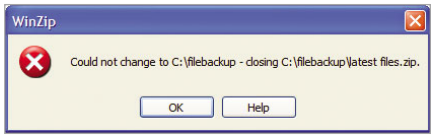
Check for Compatibility Mode. If you are still seeing the error message and the computer is running Vista or Win7, Windows might be running QuickBooks in Compatibility Mode. To find out, close QuickBooks and then find the QuickBooks icon. It may be on the Desktop. If it isn't, you can find it by clicking Start and then typing QuickBooks in the Search field.

Right-click the QuickBooks icon, click Properties, and click the Compatibility tab when the Properties window appears. Under Compatibility Mode, uncheck the Run This Program In Compatibility Mode For box. If the box is already unchecked, Compatibility Mode is not the problem. Click the OK button and attempt to mail a transaction from QuickBooks. If you unchecked the box, you should not see the error message at this point. For more information, see Intuit's support page at tinyurl.com/y2gemae.

WINZIP

Error

Could not change to C:\XXXXX – closing C:\XXXX\XXX.zip.



Translation: If you see this error message, you are using WinZip to convert a file into the ZIP file format. You right-clicked the file, selected WinZip in the context menu, and then clicked Add To Zip File. You changed the file path to which you wanted the .ZIP file to go and then clicked the Add button. This error message means that you created a file path that leads to a folder that doesn't exist. It may be that you created a typo when you adjusted the file path name, or it may be that you were trying to create a new folder. In either case, you threw WinZip for a loop.

Solution: To solve this problem, close the error message and then return to the Add window. In the Add To Archive box, retype the file path. If your file path is correct and includes only folder names that already exist, WinZip will create the file when you click the Add button.

If you want to create a new folder for the .ZIP file you're about to create, click the New button. When the New Archive window appears, browse to the folder in which you'd like to place the new folder, and then enter a name for the folder into the File Name field and press ENTER. In the Add window, click the Add button. The file will appear in the new folder without triggering the error message. For more information, see WinZip's troubleshooting tips at tinyurl.com/y2eltby.

Pest Control
Remove Stubborn Bugs

If your computer has a virus its security software can't detect or remove, it's time to roll up your sleeves and go after the bug yourself. We show you how to root out deeply entrenched viruses.

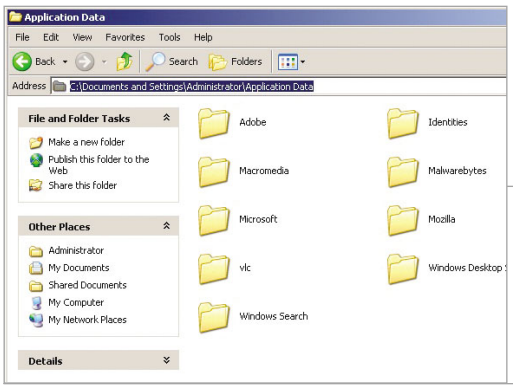
AV.EXE

AV.EXE is a key component in a wide range of rogue Internet security applications that include: Antivirus XP 2010, XP AntiSpyware 2010, XP Antivirus Pro, XP Internet Security, XP Internet Security 2010, Vista Internet Security, Vista Internet Security 2010, Vista Antivirus Pro, Vista Guardian, Antivirus Vista 2010, Win 7 Antispyware 2010, Win 7 Internet Security, Win 7 Internet Security 2010, and Win 7 Guardian. The above applications are essentially the same rogue application with a different name. Each reports false virus infections and prompts the user to buy the full version to save his system.

How To Tell If AV.EXE Is On Your System. All AV.EXE have one thing in common: If you press CTRL-ALT-DELETE and open the Task Manager, you'll see AV.EXE running in the list of processes. Ending the AV.EXE process will temporarily stop any pop-ups and fake security warnings, but these rogue applications often set themselves to launch anytime the user runs another .EXE file. (So opening Firefox, for instance, might start AV.EXE running again.)

How To Manually Remove AV.EXE. Before you can do much of anything, you'll need to stop the AV.EXE process running in the background. To do this, press CTRL-ALT-DELETE, click Task Manager, select AV.EXE in the Processes tab, and click the End Process button. Keep the Task Manager open and end the AV.EXE process should it restart itself while you are following these instructions.

Next, you'll need to delete the AV.EXE file. This file usually resides in the Application directory, and the precise location of that directory changes depending on which OS you're using. Nonetheless, you can find your Application directory by opening My Computer, typing **%AppData%** in the Address bar, and pressing the ENTER key. If you don't see AV.EXE, you may need to make some changes to your Windows Folder Options. Open My Computer in Windows XP and click Folder Options in the Tools menu (in Vista/7, open the Start Menu and type **folder options** into the Search Programs And Folders field). Click the View tab and select Show Hidden Files And Folders (or Show Hidden Files, Folders, And Drives in Windows Vista/7) and remove the check next to Hide Protected Operating System Files (Rec-ommended). Select AV.EXE and press SHIFT-DELETE to remove it permanently.



The location of the Application Data directory depends on your OS. The easiest way to locate it is to type %AppData% in the Address bar in My Computer.

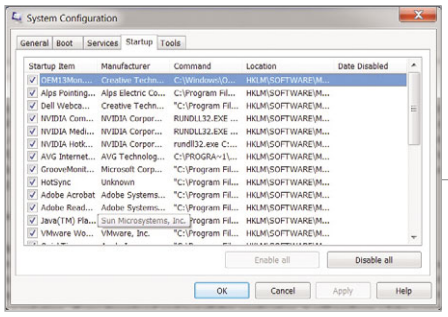
Next, you'll need to delete associated Registry keys using the Registry Editor. See the "Edit The Registry" sidebar.

Finally, after finding and deleting the Registry keys, make sure Windows isn't still configured to run AV.EXE at startup. In WinXP, click Start, Run, and type **msconfig** (in Vista or Win7, click the Start Menu, type **msconfig** in the Search Programs And Files field, and press ENTER). Click the Startup tab and, if there's an entry for AV.EXE, remove the check mark in the checkbox. Reboot the system when you're finished and check the Task Manager to ensure AV.EXE is not running.

Antivirus 360

Antivirus 360 is yet another rogue antivirus application. This application's name is suspiciously close to Symantec's Norton 360 (www.symantec.com), which is legitimate, popular security software.

Like most rogue applications, Antivirus 360 often weasels its way onto your system through Trojan horses that display fake security warnings and suggest Antivirus 360 as the solution. If you download and install this application, it will perform a fake scan listing several infected files. To "remove" these files, you'll have to buy the full version. One dangerous component to Antivirus 360 is that it often lists valid and sometimes



Even after eliminating AV.EXE, you may want to make sure your system isn't set to load it on startup to avoid error messages. System Properties is the easiest way to prevent your system from trying to load AV.EXE.

important Windows system files as a virus. Deleting these files on your own can cause problems.

How To Tell If Antivirus 360 Is Installed. Antivirus 360 is sometimes installed by users who mistakenly believe that Antivirus 360 will remove infected files.

How To Manually Remove Antivirus 360. In most cases, the malware is constantly running in the background and may cause problems during the removal process if you don't close the program before starting to remove it. Press CTRL-ALT-DELETE and open the Task Manager. Make sure the Processes tab is selected, click AV360.EXE, and click the End Process button. Keep the Task Manager open, and if you notice AV360.EXE running again, select it and click End Process again.

Next, delete the Antivirus 360 program files. In My Computer, open C:\Program Files and delete the A360 directory. This should also remove the AV360.EXE file.

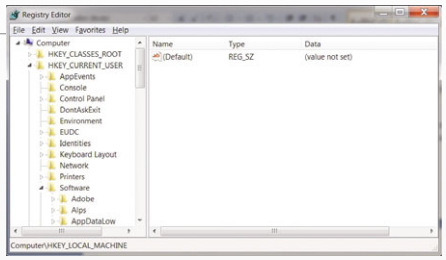
The final step is to remove Registry keys added by Antivirus 360. Follow the general instructions and Antivirus 360 specific instructions in the "Edit The Registry" sidebar. ❚❚

BY CHAD DENTON

Edit The Registry

Warning: Making a mistake while modifying your Windows Registry can cause severe errors. Always follow instructions carefully when modifying your Windows Registry. Before making any changes, create a backup of your Registry. To create a backup, click Run in the Windows XP Start menu and type ***regedit*** *to open the Registry Editor (in Windows Vista and Windows 7, type* ***regedit*** *in the Start menu Search field). In the Registry Editor, click File and Export. Select a location to save the backup and provide a name for the backup.*

Registry keys are arranged in a hierarchical structure similar to directories and are listed on the left side of the Registry Editor window. If you select a key, you can view individual values on the right side. While you can delete or modify these values, in most cases you'll need to delete a key by right-clicking the proper key on the left side of the Registry Editor and clicking Delete.



Registry keys are found on the left side of the window in a hierarchical structure. Right-click the proper key and select Delete to remove it.

AV.EXE

To finish removing AV.EXE, you'll need to find and delete three keys. The exact name of the Registry keys may depend on the version name being used by the rogue antivirus software. Start by navigating to HKEY_CURRENT_USER\Software and search for any keys matching one of the application names used for AV.EXE (Win 7 Antispyware 2010, for instance). If you find any, right-click it and select Delete. Next, repeat the above process for:

HKEY_LOCAL_MACHINE\SOFTWARE
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall

Antivirus 360

To finish removing Antivirus 360, you'll need to delete a few Registry entries. After opening the Windows Registry Editor and backing up your Registry, delete the following keys:

HKEY_CURRENT_USER\Software\AV360
HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Run\"AV360"
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\AV360

Fast Fixes

Compiled by Kris Glaser Brambila

CyberLink Media Suite 8

Update: This update for CyberLink's Media Suite takes PowerStarter to version 101524 and adds launch support for PowerDVD 10. It also fixes startup problems encountered by some versions of Windows XP.
Installation: To download the Media Suite update, point your browser to www.cyberlink.com. On the main page, click Support and choose Software Updates from the list of choices. On the next page, locate Media Suite and then click its corresponding red, upward-pointing arrow. Next, click the Download button next to CyberLink Media Suite 8 Updates and save the file to your hard drive. Once you have downloaded the file, locate it and then double-click it to begin the update installation.

www.cyberlink.com

Adobe Flash Player 10

Update: This update for Adobe's Flash Player repairs a vulnerability that could weaken the program, allowing access to unauthorized and potentially malicious users.
Installation: To install the latest Flash Player update, visit www.adobe.com. Hover your mouse pointer over Downloads on the main page and choose Updates from the drop-down list. In the Find Product Updates section, choose Flash Player from the drop-down list and click Go. On the next page, locate Adobe Flash Player 10 Update For Flash CS4 Professional and then click the corresponding blue download link. Save the .ZIP file to your hard drive. Once the download is complete, double-click it to open the zipped file (if you don't have a .ZIP file utility, you can download WinZip at www.winzip .com). Within the WinZip utility, open the Flash Player folder, then Players, and choose FlashPlayer.exe to begin the installation.

www.adobe.com

Security Update For Windows 7

Update: This update ensures the safety of your Windows 7 computer from a detected vulnerability that could allow a remote attacker to gain control of your computer system.
Installation: To download the update, navigate to www.microsoft .com/downloads. On the main page, type **KB979309** in the search field and press ENTER. From the list of results, click Security Update For Windows 7 (KB979309). On the next page, click the Download link found in the blue box. A new page will appear telling you that the download should begin automatically. If not, click the Start Download link and save the file to your hard drive. When the download is finished, double-click the file to start the installation.

www.microsoft.com

Maxthon Browser Version 2.5.12

Update: The latest version of the Maxthon Web browser features an improved Ad Hunter, which stops pop-up windows; an integrated online favorites service; an improved feed reader; and skins that let you change the look of your browser.
Installation: To download the latest version, navigate to www.maxthon .com and click Downloads at the top of the page. On the resulting page, click the yellow Latest Version: 2.5.12 button and save the file to your hard drive. Once the file has downloaded, locate it and double-click it to begin installing your new browser.

www.maxthon.com

Fix Of The Month

Canon RAW Codec 1.7.0

Update: This update makes it possible to successfully import and display Canon RAW image files from various camera models, such as the EOS-1D Mark IV and EOS 550D, among others, on computers running 32-bit or 64-bit versions of Windows XP/Vista/7.
Installation: Download the codec by pointing your browser to www.usa.canon.com. On the main page, hover your mouse pointer over Support and click Consumer. On the Support page, select EOS (SLR) Camera Systems for the first category field, pick Digital EOS Cameras for the second, and choose Canon RAW Codec Software for the third. Then click Go. On the next page, click the Drivers & Downloads tab and then select your OS (operating system). Scroll down to the Software section and locate Canon RAW Codec 1.7.0. Click the rc170upd_71.exe link directly below. Next, scroll to the bottom of the download page and click I Agree-Begin Download and save the file to your hard drive. When the download is complete, locate the file and double-click it to begin the installation.

www.canon.com

Q&A

Need help with your hardware or software? Looking for simple explanations on technical subjects? Send us your questions!

Get straight answers to your technical questions from *Smart Computing*. Send your questions, along with a phone and/or fax number, so we can call you if necessary, to: *Smart Computing* Q&A, P.O. Box 85380, Lincoln, NE 68501, or email us at q&a@smartcomputing.com. Please include all version numbers for the software about which you're inquiring, operating system information, and any relevant information about your system. (Volume prohibits individual replies.)

Multimedia

Q The operating system on my computer is Windows XP, and one of my programs is iTunes. I use this program to load my 5-year-old iPod mini. At the present time, there are 31 songs on my iPod, which Apple refers to as a "library." I want to add 12 new songs onto the iPod. When I connect the iPod, the iTunes home page appears, showing that the 12 songs are there, but when I click Sync, a window appears indicating that my iPod cannot be synced with two libraries at the same time. I am offered the option of erasing the original 31-song library and loading the new 12-song library. I have attempted to find a way to add new songs without deleting any of the 31 songs with no success, because it makes no sense not to have that option. If, indeed, there is a way to do so, could you please send me those steps, in sequence, so as to resolve my problem?

A Ideally, you would only have one library for your iTunes music. When you want to add music tracks to this library, all you need to do in iTunes is click File, Add File To Library, and browse to where the new music files are kept. You can also do this for an entire folder of music if that's more convenient.

If you don't have the original music, you'll need to export it from the 12-song library, and then reimport it to your main library. This will require a CD burner and blank discs. From within iTunes, click File and New Playlist. Add all 12 songs to this playlist and then highlight this playlist. Now, click File, Library, and Burn Playlist To Disc. Select Audio CD for the disc format. After the disc is completed, you'll want to import the music you've exported back into your library. Simply reinsert your new CD and click the Import CD button at the bottom-right corner of the iTunes window.

Windows

Q I have a laptop with a 2.1GHz Intel Core 2 Duo T6500 processor, 4GB memory, Windows Vista Home Premium, and a 64-bit operating system. I received a Windows 7 upgrade disc from the manufacturer and was going to do an upgrade installation. A friend, who knows much more about computers than I do, recommended that I do a clean install. Other than saying a "clean install will work better," he offered no other explanation. Is there a clear advantage to performing a clean installation vs. an upgrade installation? I visited the Toshiba Web site where I found excellent instructions for performing a clean or upgrade installation. I got the impression that an upgrade will work well for my particular computer. Would you recommend performing an upgrade or a clean installation?

A The primary advantage of doing an upgrade install is that applications and settings are transferred to the new installation. This is a huge timesaver and not one to be dismissed lightly. However, our anecdotal experience has been that upgrades have more problems than clean installs.

Another aspect to consider is that doing a clean install helps you do some computer housecleaning. It's often hard to make time to sort through all of your documents and files, and doing a clean install forces you to put at least a modicum of effort into deciding what's important.

In your case, there's no harm in trying an upgrade instead of a clean install. The only possible cost will be your time if you have to troubleshoot a problem that arises from the upgrade. And, as always whenever doing any major work on your system, perform a full backup of your data in case anything goes awry during the installation process.

Hardware

Q My printer takes a long time to print. The printer seems to be working OK, but the time it takes from selecting Print until the printer starts is between 30 and 50 seconds. We have uninstalled the printer and reinstalled it, but it has not helped. The computer has a Pentium 4 processor running WinXP Home, 1,024MB RAM, and an 80GB (40GB free) hard drive. We've cleaned out the CPU of any dust. We run the computer daily but with sufficient ventilation. We're wondering if our 4-year-old CPU needs replacing.

A From your description of your computer, there's no hardware reason why printing should be slow. You didn't mention whether the printer is connected directly to your computer, or if you're printing across a network. If you're printing across a network, the problem might be due to a network configuration error or a hardware component not performing well.

One thing that might improve your printing speed is changing how Windows handles your print spooling. **Spooling** is the process of preparing the document you wish to print. If you have a large document, this spooling process can take some time. Windows spools print documents so that you can do something else once you've submitted your print job. However, there's a setting that can dramatically increase your print speed: telling Windows to send pages to the printer as soon as they're spooled.

To check this setting, click Start, Control Panel, and Printers And Other Hardware. Select Printers And Faxes, right-click your printer, and select Properties. Select the Advanced tab and make sure that the Spool Print Documents So Program Finishes Printing Faster radio button is selected. Next, make sure that the Start Printing Immediately radio button is selected, as well. Click Apply and OK.

Windows

Q I recently purchased a laptop with Windows 7 Professional preinstalled. I keep getting an annoying notification that indicates when CAPS LOCK is on or off. This delays my typing speed. Can I disable it?

A There are two methods to disable this notification. The first is by uninstalling the Quickset application. This is an application installed by your system builder that might be causing the issue. Right-click the Taskbar and click Start Task Manager. Next, select the Processes tab and click the Show Processes From All Users button at the bottom. Under the Image Name column, look for an application named Quickset.exe. If one is present, highlight it and click the End Process button.

To permanently remove this application, click Start, Control Panel, and click Uninstall a program. Highlight the Quickset application and then click Uninstall. Follow the steps, and Quickset will be out of your hair.

Windows

Q I've installed Win7 on my PC and although I think it's a huge improvement over WinXP, it isn't as speedy as I had hoped. Is there an easy way to tell which upgrades to my system would be beneficial?

A When Microsoft introduced Windows Vista, it added a system rating tool that measures the overall performance of your system. Microsoft has included this in Win7, and it can give you some guidance regarding the most optimal upgrades for your system.

To see what Microsoft terms your Windows Experience Index, click Start, right-click Computer, and select Properties. Next, click Performance Information And Tools. This shows you a rating for five primary components of your computer on a 1 to 7.9 scale; the higher the score, the better the component.

If you see one component that is far lower than the others, that's the first place we'd recommend upgrading. If all of your components have a comparable rating, we would typically prioritize upgrades as follows: memory, graphics, CPU, and then hard drive. This isn't a hard-and-fast rule, however, as you can easily reach a point of diminishing returns if you focus too much on a single component.

Frequently Asked Questions

Answers to users' most common questions about All-In-One Printers

Usually based on a laser or inkjet print engine, an all-in-one device typically has a hinged lid that covers the platen glass of its scanner component.

FAQ What is an all-in-one printer?

This is a combination device that comprises the abilities of a printer, scanner, copier, and often a fax machine. All-in-one printers are also called multifunction printers or multifunction devices; some vendors abbreviate these to MFD or MFP.

By and large, this type of peripheral connects to your computer with a USB cable. However, some all-in-ones also have Ethernet ports so they can attach to a network. They may also have wireless capabilities. An all-in-one with a fax onboard will also have a jack for a phone line.

Usually based on a laser or inkjet print engine, an all-in-one device typically has a hinged lid that covers the platen glass of its scanner component. Many have a front- or top-mounted display and a keypad, too. The keypad is useful for faxing, copying, and other operations without using a PC.

FAQ Who would want to buy an all-in-one printer?

Many all-in-one printer owners have home offices, either for telecommuting or for running private businesses. Because there isn't much room in a typical home office, such users often turn to an MFD instead of buying a separate printer, scanner, and the rest, which would take up several times as much desk and shelf space.

Students make up another large market segment for compact all-in-ones, and not just because dorm rooms often have even less usable space than a home office. When it's late at night, most students would rather use a multifunction printer to scan in a diagram for a presentation or to make copies of study group handouts than make a trek to the corner copy store.

FAQ How can an all-in-one printer help me?

A good MFD can save you money. If you wanted to duplicate the functions of a common multifunction printer, you would have to buy an inkjet or laser printer, a digital scanner, and a fax machine. And if you wanted to avoid the cost of buying a copy machine, which could be substantial, you would have to make sure that your new scanner comes with software that allows it to make copies in conjunction with your printer.

FAQ Are there any drawbacks to MFDs?

Every combination device shares a few hypothetical drawbacks. For example, say that one part of an all-in-one printer breaks, and you have to send it in or take it somewhere for repair. You won't just be missing the malfunctioning fax, but also your printer, your copier, and your scanner until you get a repaired or replacement unit.

Another lament about gadgets that have lots of functions in the manner of a Swiss Army knife: You might get a couple of good features along with one or two mediocre ones. For instance, your MFD might be fast at everything it does, but its print or scan quality might leave something to be desired. The best game plan is to thoroughly research an all-in-one—and hopefully try it out—before you buy it.

Finally, because this type of convergent peripheral boasts several types of mechanisms in a single case, it might not be as easy to troubleshoot as a standalone printer. For example, you might find it trickier to replace ink cartridges or to unclog a paper jam in an MFD than in a standard inkjet.

Are you having trouble finding a product or getting adequate service from a manufacturer? If so, we want to help solve your problem. Send us a description of the product you're seeking or the problem you're having with customer service. In billing disputes, include relevant information (such as account numbers or screen names for online services) and photocopies of checks. Include your phone number in case we need to contact you.

Letters may be edited for length and clarity; volume prohibits individual replies.

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A Yahoo! Update & Too Many TVs

About three years ago, a friend asked me to design a Web site for his business. He got Yahoo! to host the site, and everything had been fine until December 2009 when I tried to update the site and got a message that said in order to make updates I had to subscribe to Yahoo! Web Hosting. This despite Yahoo! continuing to bill my friend's credit card each month. I can't reach Yahoo! by phone. I have sent Yahoo! email messages but have gotten no answers. Could you help us?

Robert Stanford
Douglasville, Ga.

After receiving Robert's letter, we learned firsthand how difficult even finding a phone number online for Yahoo! Web Hosting's customer care staff could be, let alone contacting the service. At one point in his attempts, Robert even tried calling the Yahoo! Web Hosting sales phone number listed prominently online but was told they couldn't provide assistance. After a fair amount of research just tracking down contact leads, we eventually bypassed Yahoo! Web Hosting entirely and instead contacted representatives within Yahoo!'s public relations staff. Just hours after sending our message, a Yahoo! representative informed us that Yahoo! Web Hosting had contacted Robert and his friend following our message and managed to work with Robert and his friend to get the update problem resolved.

In November 2009, I ordered a flat-screen 40-inch TV from Dell through a limited-time offer. Dell told me the TV might be unavailable but said I should order it anyway using a Dell credit card to get the limited-time lower price, which I did, but I couldn't be guaranteed a TV. Later, I went online and found the same set. I ordered it through a Dell operator in the Philippines, who told me he would cancel the order I already charged to my Dell credit card and ship me the set immediately. Both models were $634.93 with tax included. I used a Visa credit card to order the second TV, which I received days later and signed for. About a week later, the shipper notified me I had a second TV for shipment, which I refused. Dell later sent me a bill stating it gave me credit for one set but was charging me for the second set that I refused, pricing it at $687.93 ($53 more) and added $39 in late charges.

I have emails from Dell stating one TV order was canceled, but Dell insisted I kept the TV that cost $53 more. I offered to send the serial number of the set I kept, so Dell could see I didn't accept the model it says I kept. No luck; Dell won't budge. My wife paid the $92 bill so it wouldn't affect our credit rating. Can you help me?

Guy Umberger
Lebanon, Pa.

The first person we reached out to at Dell proved unresponsive. After approaching a second contact with Dell, we eventually reached Dell's global commercial product reviews manager. The manager forwarded the details of Guy's situation to another Dell representative, who directly contacted Guy and informed him that Dell planned to make a one-time refund for the extra $53 he paid and for the late charges that Dell applied. On April 2, Guy told us that he received a check for the extra amounts he was charged.

Remote Possibilities

I've been pretty remote lately. Not in the sense of holing up to "work on my column" (listen to the Phillies) or in the sense of hiking Alaskan glaciers. In fact, "remote" hardly seems a fitting adjective because this mostly involves distances no greater than the height of our back stairs. But Microsoft calls it Remote Desktop, so I'm stuck with the term. It had been years since I used Remote Desktop regularly, but in my advancing age—and during baseball season—I'm rediscovering the simple pleasures of not leaving my seat to solve technical problems.

If you've never used Remote Desktop, you're in for a treat. From the All Programs menu, click Accessories and select Remote Desktop Connection. You'll need to know the machine name or IP (Internet Protocol) address of the remote computer, but you should be able to get that information from the host's My Computer properties. Enter that name or address, click Connect, and log in. You need to have a username with a password configured in order to use Remote Desktop, but that's pretty easy to set up from the Control Panel. Finally, you'll have to make sure the target machine allows remote connections. Check by right-clicking Computer (or My Computer), selecting Properties, and selecting Remote Settings (or the Remote tab, in Windows XP). Make sure the option allowing users to connect remotely is checked.

So why bother with these one-time steps to enable Remote Desktop? For starters, I'm constantly fighting Internet bandwidth issues. Being without cable, we watch a lot of online video via Netflix streaming, Hulu, and PlayOn. Sometimes we roll along just fine. Sometimes we're caught in an eternal loop of buffering and rebuffering. I can't throw Verizon completely under the bus, because my wireless signal is less than stellar, and I suspect that one or more of my machines harbors persistent "auto-updates" from bloatware. How do I tell whether my entire connection is slow or it's just the machine I'm on at the moment? I could run upstairs, open IE, do a test, run back downstairs, do another test, and compare results. Or I can connect to the upstairs computer and run the tests side by side. Of course, that doesn't help if the network itself is having trouble, but that's useful information, too.

Also, when I'm having trouble printing or accessing music files from another machine, I log in remotely to see what's going on. Sometimes you can clear a print queue or force out a jammed up application and get moving again, all without stretching your legs. Seriously, though, I find it faster and more productive to do my initial troubleshooting remotely instead of spending time shuttling between floors. I'll even reboot the remote machine (which, of course, kills the connection), wait a few minutes, and reconnect to see if things are working again. There's no obvious shutdown or restart option via Remote Desktop, but entering **shutdown -r** via Windows' command line interface does the trick nicely. You can also press ALT-F4 with all your applications closed to select an option from the Shutdown menu.

Finally, Remote Desktop lets me share the software and hardware on each computer with each of the others, without having to buy every application I use for every computer. I can simply connect remotely and use Photoshop from the basement on my wife's notebook while watching "Modern Family." I don't need to carry around a Memory Stick if I want to work on the budget spreadsheet from the sunroom. And I can check out different tools on WinXP, Windows Vista, and Windows 7 from each computer (and their virtual machines).

There's just one thing I'm missing. I can't access my computers remotely from outside my network. I can't log in from the coffee shop or my friend's house. Back when I paid for a static IP address (and had delusions of hosting my own Web sites), I could log in to my home network from work with no problem. But with my current dynamic IP setup, I haven't yet figured out how to get to (and through) my router and firewall and log in remotely from the public Internet. If you've mastered this trick, I'd love to hear and share.

BY GREGORY ANDERSON

Gregory Anderson *is a regular contributor to* Smart Computing *and several other technology publications. He keeps a sharp eye (with the help of thick glasses) on computing trends and enjoys working with geeks of all stripes—most of time. Share your remote ramblings at* **gregory-anderson@smartcomputing.com**.

Ovation

Each month, the *Smart Computing* staff gets to work with all kinds of new computing and consumer electronics products. Here are some of the favorite items that crossed our desks.

Pro 80 Photo Frame

$147.99 Starter Pack (Including frame and one year of service)
Ceiva | www.ceiva.com

This Father's Day you'll want to be connected with your family, and what better way to connect than through family pictures? The Ceiva Pro 80 photo frame makes it easy to spread the love by letting you stream photos to the frame instantly over your home network or send images from anywhere via phone or Internet. Either way, the photos will automatically display in your Ceiva Pro 80 frame. The Ceiva Pro 80 doesn't even require a computer, so anyone can use it: Place the frame on a table, connect it, and Ceiva's PicturePlan photo delivery service does the rest. Display photos automatically every day or deliver by date according to a schedule you choose. Whether the Ceiva Pro 80 ends up on Dad's desk, Grandma's living room table, or the kids' night stand, you know it'll be appreciated, day after day, month after month.

by Rod Scher

B-510DN

$599 | Epson
www.epson.com

Yes, you can get a high-quality business-class inkjet without having to apply for a new SBA loan. Check out the Epson B-510DN small business printer. It's economical, fast, and versatile. And when we say economical, we mean genuinely frugal: The B-510DN's high-yield ink cartridges can print about 8,000 black-and-white pages or about 7,000 color pages; this can bring your costs down to a stingy 4 cents per page. The printer is ENERGY STAR-compliant, so you know it's also environmentally friendly and a bit of an energy miser. The rear sheet feeder can handle envelopes, labels, special stock, and more. Both the front paper cassette and the rear sheet feeder can handle legal-sized paper. With a monthly duty cycle of 20,000 pages, this is a serious business printer—but without the serious price.

by Rod Scher

Wireless N USB Network Adapter

$39.99 | Actiontec
www.actiontec.com

We reviewed the Wireless N USB Network Adapter in our March issue, but at the time, it did not offer built-in drivers for Windows 7. Now it does (and it still includes drivers for Windows XP/Vista), so we were able to simply plug the adapter and let it install the drivers automatically, instead of us handling the driver installation. That simplicity makes the Wireless N USB Network Adapter ideal for people who need to switch their Wi-Fi adapter among several computers. It supports 802.11b/g/n signal standards, as well as WPA-PSK (Wi-Fi Protected Access), WPA2-PSK, and WEP (Wired Equivalency Privacy) security encryption standards. The Wireless N USB Network Adapter also worked well in our network tests the second time around.

by Nathan Lake

N0503 ComboNAS

$499 | Thecus
www.thecus.com

We've discussed the benefits of NAS (network-attached storage) in previous issues, and the Thecus N0503 ComboNAS exemplifies the multimedia storage options that are possible with a NAS unit. Designed to function as your home media hub, the N0503 can act as an iTunes server to back up your music collection.

The Thecus N0503 ComboNAS also serves as a photo Web server with universal plug and play compatibility for storing and sharing other digital media. The N0503 can house up to five 2.5-inch or three 3.5-inch hard drives. The security-conscious user will appreciate the built-in IP camera surveillance server, which can work with your home monitoring equipment.

by Joanna Safford

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